

**An-Najah National University  
Faculty of Graduate Studies**

**Inaccuracy in the Translation of Dentistry  
Terms from English into Arabic**

**By  
Mohammad Fawaz Mahmoud Khmous**

**Supervisor  
Dr. Ayman Nazzal**

**This Thesis is Submitted in Partial Fulfillment of the  
Requirements of the Master Degree of Applied Linguistics  
and Translation, Faculty of Graduate Studies, An-Najah  
National University, Nablus, Palestine.**

**2016**

**Inaccuracy in the Translation of Dentistry  
Terms from English into Arabic**

**By  
Mohammad Fawaz Mahmoud Khmous**

**This Thesis was defended successfully on 05/06/2016 and approved by:**

**Defence Committee Members**

**Signature**

**Dr. Ayma Nazzal / Supervisor**

.....

**Dr. Mohammad Thawabteh /External Examiner**

.....

**Dr. Fayez Aqel /Internal Examiner**

.....

### III

## **Dedication**

This thesis is mainly dedicated to both most dearest and closest people in the world my dead mother and father, mercy of God may be upon them, my dear wife Nida' Khmous, my sisters, my brothers who highly encouraged and supported me and much gratitude to my dearest friends who are considered the supreme closest souls.

## **Acknowledgements**

The first and the last gratitude is devoted to God almighty for this great grace that inspired me with the ability to have this successful work and bring it to life despite the hard time I have passed through lately. Special thanks to many other people who have greatly supported and encouraged me. The deep gratitude is dedicated mainly to the psychological presence of my mother and father despite their long time death, who are constantly present in my heart and mind which provides me with the necessary support to stand firm and overcome all the odds and difficulties. Second, I wish I could have the ability to pay my supervisor Dr. Ayma Nazzal his right for his constant encouragement, support, stand, advice and patience during the time of the thesis preparation. He is a real honest faithful guidance and director who has shown patience and has helped me to materialize this work. Special thanks to the members of the examining committee, Dr. Fayez Aqel and Dr. Mohammad Thawabteh who have had valuable comments and directions with which the thesis could have been a successful one. My immense gratitude to all of my instructors who have enlightened me the road towards translation and linguistics knowledge in the different courses in all my M.A. programme time, namely: Dr. Ruqaya Hirzahllah, Dr. Fayez Aqel, Dr. Odeh Odeh, Dr. Nabeel Alawi, Dr. Sameer Issa, Dr. Abdulkareem Daragmeh, and Dr. Sufian Abuerah. My warmest thanks are also dedicated to my dear wife who showed patience, support, and encouragement. Finally, I would like to thank all my friends and relatives who constantly supported and encouraged me.

إقرار

أنا الموقع أدناه، مقدم هذه الرسالة التي تحمل عنوان:

**عدم الدقة في ترجمة مصطلحات طب الأسنان من الإنجليزية إلى العربية**

**Inaccuracy in the Translation of Dentistry**

**Terms from English into Arabic**


أقر بأن ما اشتملت عليه هذه الرسالة إنما هو نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وأن هذه الرسالة ككل أو جزء منها لم يقدم من قبل لنيل أية درجة علمية أو بحث علمي أو بحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

**Declaration**

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree.

Student's name: **Mohammad Fawaz Mahmoud Khmous** اسم الطالب:

Signature:

.....

التوقيع:

Date:

05/06/2016

التاريخ:

## Table of Contents

Subject	Page
Dedication	III
Acknowledgements	IV
Declaration	V
Table of Contents	VI
List of Tables	VIII
List of Abbreviations	IX
Abstract	X
<b>Chapter One</b>	1
1.1 Introduction	1
1.2 Statement of the Problem	6
1.3 Purpose of the Study	8
1.4 Research Questions	10
1.5 Significance of the Study	10
1.6 Limitations of the study	12
1.7 Structure of the Study	12
<b>Chapter Two: Review of Related Literature</b>	14
2.1 Introduction	14
2.2 Literature Review	14
2.3 Features of Technical Translation and Language of Science	20
2.4 Characteristics of Medical and Dental translation	26
2.4.1 Historical overview of medical translation	26
2.4.2. Medical and Dental terminology	29
2.5 History of Medical and Dental Arabic Translation	32
<b>Chapter Three: Methodology and Theoretical Framework</b>	36
3.1 Introduction	36
3.2 Description of the Study	36
3.3 Tools and Data Collection	36

<b>Subject</b>	<b>Page</b>
3.4 Population & Sample of the Study	37
3.5 The procedures of the Study	39
3.5.1 Interviews with Dentists	43
3.5.2 The Questionnaire	44
3.6 statistical analyses	45
<b>Chapter Four: Data Analysis and Discussion</b>	46
4.1 Introduction	46
4.2 Types of dental terminology translation inaccuracy from English into Arabic	49
4.2.1 Descriptive, Arabicisation and Transliteration equivalence	50
4.2.2. Conventional vs technical translation inaccuracy	55
<b>Chapter Five: Conclusion and Recommendations</b>	73
5.1 Conclusion	73
5.2 Recommendations	75
References	77
المخلص	ب

## VIII

**List of Table**

<b>Table No.</b>	<b>Title</b>	<b>Page</b>
Table (1)	Terminological translation equivalences Descriptive vs. Arabicisation vs. Transliteration	51
Table (2)	Terminological translation equivalences Descriptive vs. Arabicisation	52
Table (3)	Terminological confusion and ambiguity in relation to descriptive vs. Arabicisation vs. transliteration translation.	54
Table (4)	Terminological confusion and ambiguity in relation to 5 vs. transliteration translation.	55
Table (4)	Dental terminological inaccuracy in relation to some dentists' translations	59



**List of abbreviations**

SL	: Source Language
TL	: Target Language
ST	: Source text
TT	: Target text
UDD	: Unified Dictionary of Dentistry
UMD	: Unified Medical Dictionary

X  
**Inaccuracy in the Translation of Dentistry  
Terms from English into Arabic**

**By  
Mohammad Fawaz Mahmoud Khmous**

**Supervised  
Dr. Ayman Nazzal**

**Abstract**

This study has investigated the inaccurate areas in the translation of dental terms from English into Arabic. The problem has been discussed regarding the different technical inaccurate areas committed in pilot study.

In fact, dentistry terms translation is a branch of technical translation which has directed the researcher to define and analyze the different technical translation strategies in general which are also used in dentistry translation as well.

The researcher has also focused on some technical translation views and directions which have been discussed by different famous scholars in the field. The study identified the causes of inaccuracy in the translation of dental terms and to find out the convenient and satisfying solution for the problem.

The findings of the study can be an authentic source and assistance to the dentists to overcome the mentioned translation problems.

Moreover, the thesis has discussed the shortcomings of using different dental translation strategies simultaneously for the same term which undoubtedly can cause a serious ambiguity and confusion translation results.

Using pilot study is the main data collection with a number of personal interviews with a number of dentists which has provided a deep knowledge and a clear vision about the nature of the current dental translation process.

The region of the study covered two main areas, namely Nablus city and the Arab American University in Jenin and the questionnaire has included a sample of 100 dentists, carefully investigated, studied and analyzed.

The study has not revealed an important regional factor about the range of dental translation accuracy, but the experience and the institutional background of the dentists have much greater significant factor.

The study has clarified the difference between technical and conventional translation rules and has shown that there is a large degree of absence in technical translation rules in dental translation through the pilot study analyses.

The study has discussed the main technical translation equivalences, namely Arabicisation, transliteration, and descriptive translation equivalences and has shown that Arabicisation is highly neglected and rarely used among dentists whereas transliteration is the most common especially among specialists and descriptive is mainly used with non-specialists.

## XII

The study has concluded that the main dependent and recommended dentistry translation sources are the Unified Dictionary of Dentistry (UDD) and the Unified Medial Dictionary (UMD) accredited by the World Health Organization in addition to Oxford Dictionary.

## Chapter One

### 1.1 Introduction:

Not long ago, little attention was given to translation as a field of study; it was regarded as a branch of linguistics. After that, translation studies were given more attention and became a fully-fledged field of study.

The word translation itself derives from the Latin term. [About the Language Realm](n.d). Retrieved on January 15, 2016 from: <http://www.languagerealm.com/articles/history-of-translation.php> "to bring or carry across." The ancient Greek term is 'metaphrasis' ("to speak across") and this gives us the term 'metaphrase' literal or word-for-word translation) – as contrasted with 'paraphrase' (a saying in other words). This distinction has been existed at the heart of the theory of translation throughout its history: Cicero and Horace employed it in Rome; Dryden continued to use it in the seventeenth century and it still exists today in the debates around "fidelity versus transparency" or "formal equivalence versus dynamic equivalence."

Hajjaj (1997: 40) argues that translation has always been recognized as one of the most important and necessary activities in all human life. Translation among human languages is very vital and important indeed. Suffice it to say that in the age of technologies, no group of people within a nation can do without access to the world of information and technology in many aspects. Technology has increasingly been invading every home in every corner of the world through radio, television, computer networks and

printed media. It is almost impossible for all people to learn just one language in their life time, and because English has become the most globally used language, translation to and from English remains the means for facilitating international communication.

Translation is not only a complex event, but it is also a multi-purpose activity, requiring skill, knowledge and an immense of efforts. The ability to transfer the thoughts and ideas from one language to another in written or oral form is not innate; it needs more knowledge, experience and practice. While every normal human being is born predisposed to acquire a language, translation does not work in the same way. It needs hard work to be learnt and mastered through a constant process.

Enani (1999: 5) defines the translator as "a writer who formulates ideas in words addressed to readers. The only difference between him and the original writer is that these ideas are the following ones."

El Shafey (1985) has argued that a translator first analyzes the message and makes the ideas easily absorbed and understood in the TL; s/he breaks the ideas down into its simplest and structurally clearest elements, transfers it at this level into the TL in the form which is most appropriate for the intended audience. The translator represents the link between the ST and the target TL receivers. His/ Her role is very important in this regard because s/he is the main authentic honest source who will write the message for others. El Shafey (1985: 95) added that "A translator instinctively concludes

that it is best to transfer the "kernel level" in one language to the corresponding "kernel level" in the "receptor language."

Farghal and Shunnaq (1999: 2) have stated that "translation is often regarded as a project for transferring the meaning from one language into another". Translation is then regarded as a human activity which enables human beings to exchange ideas and thoughts in any language. In fact, translation is highly relevant to all sciences, philosophy, linguistics, sociology and psychology.

Newmark (1988: 5) defines translation as "rendering the meaning of a text into another language in the way that the author intended the text". Hatim and Munday (2004: 3) have argued that "translation is a phenomenon that has a huge effect on everyday life." Translation is that kind of science which facilitates understanding among different nations in all aspects of life.

Technical translation is considered as a main branch in translation studies since technical sciences develop rapidly all over the world. Therefore, the need for technical translation to or from English language is very important so as to cope with that huge number of technical terms that are being coined in all languages in general and in the English language in particular. All of these terms are mainly names of different inventions, electronics, industrial products, machinery, medical sciences and other scientific fields. It is universally acknowledged that industrialization has led to the formalization of translation for business purposes since the eighteenth century. Newmark (1988: 51) says, "technical translation is one part of

specialized translation.” Despite the small number of technical terms in a text in general, they still play an important role in the text meaning. In that, Newmark (ibid) says, “Although terminology doesn’t form more than 5% to 10% of the whole text, it still plays an important role in the text.” In a sense, the text will not be acquired or understood properly unless the intended meaning of the terms is clarified. Translation is considered as a mediation between cultures in different aspects. The translator, though, has the capacity to enhance and facilitate our understanding of all global developed scientific sciences. Medical or dental terms are one branch of these scientific developments which need to be understood and illustrated through translation.

Gambier Y. and Doorslaer L. (2011:80) have presented that medical sciences have represented the oldest translation type since ancient times, dating back to ancient Mesopotamia. In subsequent civilizations, medicine has played a major construction and dissemination of medical knowledge through Greek, Latin, Arabic, English and many other languages.

Medical interpreters have an important role in hospitals, doctors' clinics, courts, conferences and many other medical areas where the patient or audience does not speak the native language of the medical staff. Medical interpreters' responsibilities are to interpret, translate and facilitate information from the medical staff to patients or from English medical language to Arabic language for example. In addition, [The Translator] (2001) Retrieved on January 20, 2016 from: <http://atlasls.com/blog/?p=65>)



"If the patient has any questions or concerns, a reverse interpretation is required so doctors and nurses can properly address the patients symptoms, concerns or questions." Dentistry is one field of medical translation that can represent serious challenges to translators. It is observed that some dentists do not translate dentistry terms in the same way or in an accurate way, and they sometimes cause some conventional or technical translation problems when translating from English into Arabic. It is also very obvious that the dentistry terms inaccurately translated from English into Arabic may cause great damage to the real intended meanings of these terms. The dental text should not be dealt with as a text free; on the contrary, it must be recognized as a text bound; this problem results from the random use of the term translation using English Arabic dictionaries. Dental translation should follow the rules of technical translation so as to avoid translation problems. Moreover, the lack of knowledge in the Arabic language basic rules is another obstacle that hinders accurate dental translation results.

The vast developments in dentistry as well as in medical sciences in general- actually need hard work in the field of translation so as to cope with all the new English terms in the Arabic language. Therefore, there is a need to find out the accurate way to transfer (translate) these scientific achievements and coin them in the Arabic language. The Arabic language translators or dentists -as specialized in the field- should work hard to find out the accurate equivalences for these dental terms according to the Arabic language accurate linguistic rules. Hence, translating English dentistry terms from English into Arabic accurately is vital and necessary for all dentists so

as to acquire the exact intended meaning and then to convey the original translated English dental texts or terms to both specialists or non-specialists.

This study focuses mainly on the inaccuracy of dental terms translation from English into Arabic and the expected negative consequences of that inaccurate translation. The discrepancies between the different translations observed in the pilot study represent the cornerstone of the study. Many other data sources will also be examined including a number of personal interviews with a number of dentists, as well as some authentic dental or medical dictionaries such as *The Unified Dictionary of Dentistry* (UDD) and *The Unified Medical Dictionary* (UMD). This study examines the inaccurate areas and sheds light on the difference between technical and conventional translation rules. It also tries to find out the most satisfying solution for dentistry terms translation problem.

## **1.2 Statement of the Problem:**

This study aims to explore the problems that translators or dentists may encounter in translating English dentistry texts or terms into Arabic, based on the available literature on technical translation. The thesis mainly identifies two problematic or inaccuracy areas: conventional and technical.

First, Greek and Latin languages are the main sources of the medical terms where prefixes or suffixes are added to the 'root word' which becomes a new term; basically, it is usually a term derived from Greek or Latin as source languages. The following important points are in place:

1. In fact, English speaking communities are pioneers in modern technologies, so all of these technologies are of Greek and Latin origins.
2. English medical terms are widely used among Arabic specialists Who favor transliteration over Arabicisation or descriptive. At the same time it has been found that Arabicisation is rarely used among specialists whereas descriptive is used with no-specialists. Hervey and Higgins (1992) have said that, translation could be viewed as a process of conveying the gist of the source text message into a target text message, and they have added that in technical translation the target text should be as close as possible to the source text.

The distinction between conventional and technical translation represents the most common problems that encounter both translators and dentists when translating technical or dentistry terms from English into Arabic in particular. Many of these problematic areas are found in the translations of many dentists. As an example of an inaccurate dental translation is found in the following dental term, translated from English into Arabic: First, the term “contamination” means تلوث in Arabic whereas it was translated into عدوى by some dentists which is not only inaccurate but totally wrong. [Wound basic](n.d) Retrieved on January 23, 2016 from: <https://quizlet.com/57036959/wound-basic-flash-cards/>.

"Contamination" implies the presence of microorganisms that do not necessarily colonize or reproduce in the host. "Infection" implies colonization and reproduction of the organism within the host."

Disease only occurs when the infection impairs the health of the host."

Another example, [Differentiate between contamination infection and disease] (n.d) Retrieved on January 25, from: [http://www.answers.com/Q/Differentiate\\_between\\_contamination\\_infection\\_and\\_disease\\_What\\_are\\_the\\_possible\\_outcomes\\_in\\_each](http://www.answers.com/Q/Differentiate_between_contamination_infection_and_disease_What_are_the_possible_outcomes_in_each) if someone got HIV containing blood on the skin, they would have contamination. If HIV got into their bloodstream and reproduces, they would have infection. They do not have disease until they begin showing signs and symptoms of AIDS. Contamination may but does not always lead to infection, and infection may but does not always cause disease. It is not necessarily true that every contamination leads to infection.

### **1.3 Purpose of the Study:**

This study is expected to investigate and to identify the exact problematic areas that encounter dentists in translation of dentistry terms. The researcher's investigation has led to identify two areas: conventional and technical where translation has been inaccurate, if not wrong. It has been found that the different connotations of dental terms are sometimes misunderstood, thus causing problems in translation of dentistry terms.

In the course of translation history, translation discourse distinguishes between types of translation equivalences according to many different

pioneers in translation: word for word and sense for sense, formal versus dynamic, literal versus free, formal versus textual equivalence, semantic versus communicative, foreignisation versus domestication, globalization versus localization, instrumental versus documentary. However, in technical translation- as in dentistry- formal, documentary, semantic, or faithful translation is more required. The technical competent translator is to be aware of these types of equivalences in this regard.

The following are the three main equivalences that are applied in technical dental translation:

1. Descriptive equivalence.
2. Transliteration equivalence.
3. Arabicized equivalence.

Fischback (1986) maintained that "translating medicine is regarded as the most universal and oldest field of scientific translation because of the homogenous ubiquity of the human body"(as cited in Shajji H. 2013:4).

This is very apparent in dentistry where there are many terms used daily by dentists and their staff in the course of delivering care to patients, maintaining patients' records and preparing claims. Many terms are familiar, especially to experienced individuals, but in general the accuracy of dental terms translation from English into Arabic depends mostly on the dentist's institutional background .[Terms and Definitions] (2015) Retrieved on January 30, from: <http://www.ada.org/glossaryforprofessionals.aspx> "New

dentists and staff, however, may not be as familiar – and over time new terms come into use and old terms are revised for clarity."

#### **1.4 Research Questions:**

The present thesis pursue to answer the following questions:

1. What are the main problems that translators face in translating technical terms?
2. What are the most common inaccurate features in translating dentistry terms?
3. What is the effect of experience and the institutional background of the dentist in the translation process?
4. What are the main causes of this inaccuracy?
5. What are the direct and indirect effects of this inaccuracy on both patients and dentists?
6. What are the possible solutions for the problem?

#### **1.5 Significance of the study:**

The main significance of the study lies mostly in understanding the exact problematic areas in the translation of dental terms and how this problem can be solved.

The significance of the study can be divided into two main parts. First, there is little research on conventional and technical inaccuracy in the translation of dental or medical terms from English into Arabic as to specialists and non-specialists. Second, it is geared toward materializing the shortcomings of inaccuracy in translating the dental terms. Third, it is also an attempt to shed light on the most problematic dental terms that are translated from English into Arabic by dentists or other dental texts, thus achieving a stable method of dental translation terms. Finally, the study is also significant to dentists, students of dentistry, translators and researchers in the field.

The pilot study was conducted in which a number of dental terms or texts were submitted to dentists to translate from English into Arabic. The sample of the pilot study was 100 dentists from Nablus City in Palestine and the Arab American University in Palestine to include all the dentists in Palestine who come from different institutional backgrounds. The dentists were asked to translate some problematic dental terms from English into Arabic. The results of this study were very clear regarding the conventional and technical problems. At the same time, the dentists reported, in the personal interviews, that they do not usually use Arabic equivalence for the English dental terms when they communicate with specialists, but they always use transliteration instead.

Depending on the data analyses, the researcher found that the institution where the dentists have graduated from had a clear important role

in the range of accuracy in the translation of dental terms from English into Arabic.

### **1.6 Limitations of the study:**

The study is limited to a number of limitations:

1. The dentists were asked to translate a number of dental terms or texts which had some problematic translation areas.
2. The study focused on dentists mainly who came from Nablus and the Arab American University in Jenin.
3. The study focused on three main technical or medical translation strategies: Arabicisation, descriptive and transliteration.
4. The study focused on the range of knowledge depth in Arabic as a basic requirement for an accurate translation.

### **1.7 Structure of the Study:**

The study falls into five main chapters as follows:

The thesis is divided into chapters according to the chronological order of scientific research methodology. Chapter One includes an introduction in which the researcher touches on historical background of translation in parallel with the importance of technical and medical translation. It also introduces the different components of main ideas of the study. Chapter Two is devoted to pioneers in medical translation or dentistry translation. It also



discusses the general features of technical and medical terms translation and how they are different from the daily usage of language. It includes definitions of dentistry term translation and the characteristics of medical and dental translation. It concludes with a look at the importance of dentistry translation to specialists and non-specialists.

Chapter Three focuses on the methodology of the study. It describes the community of the study, the sample, the primary sources of the data collection which include: Pilot study and personal interviews with a number of dentists. Chapter four is devoted to analyses of data collection and personal interviews depending on authentic reliable dental sources. The analytical results showed a variation in the translation of dentistry terms in many aspects of technical or conventional inaccuracy. Chapter Five incorporates the findings and results of this study and offers a number of recommendations.

## **Chapter Two**

### **Review of Related Literature**

#### **2.1 Introduction:**

There are not so many studies which has been devoted to the problem of inaccuracy in dentistry terms translation. However, there is a plethora of studies which discussed medical translation in general with reference to dental translation. Medical studies have had strong presence in all ancient nations and tribes since the beginning of the universe. Therefore, it is clear that medical literature has been widely available in the literature of all nations of the globe since ancient times.

This section is mainly theoretical where the researcher discusses the views and theories of medical translation studies. It is also entirely dedicated to the theoretical studies related to what has been written and discussed about medical or (dental) translation and other features or characteristics of medical language. In addition, it includes a brief historical survey of medical scientific developments especially in the first few decades of the first Islamic era. These studies and theories are very important for the subject investigation and analysis since they provides us with the comprehensive knowledge and information about the subject.

#### **2.2 Literature Review:**

One important dental study has been conducted recently by Hajjaj and Al-Jarrah (1996) who have discussed the problem of inaccuracy of dentistry

terms translation from English into Arabic. They discussed different areas of inaccuracy and categorized these translation problems into two kinds: lexical and conceptual. Although the study was limited to the events of dentistry conference held in Amman in 1996, it still represents an importance source of the study.

Fischback (1986:19) has stated that, "medical translation is less difficult than other types of scientific fields because most medical vocabulary are universally based on Latin and Greek roots, so physicians are still using Latin or Greek for records and prescription". (as cited in Pilegaard,1997:160)

Furthermore, Newmark (1988) has argued that technical translation is one part of specialized translation, politics, finance, medicine, etc. is the other. It is considered as non-cultural or universal, and is not restricted to one speech community. Although technical text consists of no more than 5-10% of the whole text, it still plays a vital role in the meaning of the text. Technical translation and translator must keep up with the rise of all technological developments because of the continual increase of technical or dental inventions and discoveries.

Newmark (ibid) has added that the style of technical terminology is free of emotive language, sound effects, and original metaphor that literary writings have.

The difficulty in technical translation lies mainly in the new coined terminology in the source language. Newmark (ibid) has said that if the technical term is context free, the translator or even the dentist will face some kind of difficulty in understanding it, whereas it will be easier to understand the term if it is context bound. Based on medical terms, Newmark (ibid) has suggested the following medical three terminology levels:

1. Academic. This includes transferred Latin and Greek words associated with academic papers.
2. Professional: Formal terms used by experts, e.g., "epidemic parotitis", 'varicella', 'scarlatina', 'tetanus'.
3. Popular. Layman vocabulary, which may include familiar alternative terms, e.g., 'mumps', 'chicken-pox', 'scarlet fever', 'stroke', lockjaw, erms, e.g., 'chicken pox'."

Newmark (ibid) has added another problem related to technical translation: difficulty in distinguishing between the descriptive terms which follow descriptive translation equivalence and the pure technical term. Newmark (ibid) has pointed out the following reasons why the original source language writer should use descriptive terms:

1. The object is new, so there is no direct equivalence in the TL.
2. Descriptive term is used to avoid repetition.

3. It is used to make a distinction between the new term and the other one.

Furthermore, Hatim and Mason (1990:78) have asserted that the problems involved in technical texts include not only locating equivalent terminology and achieving target language expression in the appropriate tenor and mode, but also in the expression of the intended meaning as well. The ultimate aim of the technical translator is to understand the real intended meaning of the technical term, and to choose the accurate translation in the accurate context in the TL. as well. Moreover, the translator need to have a good knowledge of all linguistic features such as the semantic and syntactic meanings of the term.

However, much attention has been given to the linguistic variation by various linguistic schools. Lankamp (1989: 21), for example, distinguishes between different types of medical language:

“Language of medical education, language of medical occupation, language of popular medicine, doctor’s patient language and medical technical language.” (as cited inPilegaard.1997:159).

No doubt, dentistry is definitely one branch of medical or technical language. Fischback (1986: 160) has also noted that the history of medical translation " is as old as religious translation and is considered the most universal and the oldest field of scientific translation."(as cited in Pilegaard.1997:160)

If the dentist acquires medical translation strategies beside a deep knowledge in both SL and TL, s/he will not face any difficulty in the translation of dental terms, otherwise the translation results will definitely be inaccurate and unsatisfying.

Dickens et. al (2002:184) has pointed out similar distinctions and discusses three main lexical problems in translating a technical text:

1. “Translators are unfamiliar with the technical terms since they are used in a technical context.”
2. Some technical terms are familiar to the translators and are used in non-technical contexts, but they seem to be used in a specialized way in the ST.
3. Conceptual problems in technical translation arise from ignorance of underlying knowledge taken for granted by experts, but not understood by non-specialists.”

There are legal and medical serious problems resulted from the inaccurate of dental translation, which means just one problem in translation may lead to person's loss of his/her life. Because of that, dental translation accuracy is very important and it is also very different from other branches of technical translation in this regard.

The two main inaccurate areas discussed in this study are the conventional and technical problems in translating dentistry terms through

different examples translated from English into Arabic by a certain regional number of dentists.

One remarkable study, conducted by Nassar (2002) examined the problem of lexical and non-lexical meaning loss in medical translation between English and Arabi which might definitely lead to pure medical mistakes.

Another famous stud conducted by Seiny (1987) and discussed the problem of confusion in Arabic technical terminology. The author touched on the linguistic and administrative factors that may cause a kind of confusion in the Arabic terminology. The linguistic factor is identified by the polysemous nature of the SL terms. For example, the English term "nature" has many meanings in Arabic in different subjects and fields. The administrative factor of the translator means the slow production of terms in Arabic for thousands of new concepts which force translators to coin their own new terms.

Haddad (2008) focused more on the translation of medical terms into Arabic and examined the incapacity of Arabic language to cope up with the medical terms among medical studies.

Javier (n.d) [The Study of Technical and Scientific Translation] RetrievedonFebruary4, 2016, from: [http://www.jostrans.org/issue01/art\\_aixela.php](http://www.jostrans.org/issue01/art_aixela.php) stated that technical and scientific terms started in the 1950s when

English was considered as *lingua franca*. Since then, the translation of technical terms spread widely to satisfy the urgent needs.

Harget and Alegre (2009) have argued that medical language serves special medical purposes which are very different from everyday language. In fact, it is used between professionals and in certain contexts.

Glover and Knight (1998) found a gap in the glossary of technical terms besides noting the shortage in bilingual technical dictionaries. Glover and Knight (ibid) believed that "It is not trivial to write an algorithm in turning English letters sequence into Arabic sequences."

Mason (2001) differentiates here between the function of both ST. and TT. which leads also to the important role of the translator whether he/she should be aware of the function of source text and the manner of conveying a message.

### **2.3 Features of Technical Translation and Language of Science:**

Translation is that driving force of modern world. It promotes understanding of that immense quantity of ideas, thoughts, and scientific developments among different cultures. It is also necessary for technological advancement and important for that huge number of technical devices which are daily being coined in different languages. We live nowadays in the age of information, so the technical and scientific translation is more important than before. Technical translation has moved our lives to a new life style which creates the importance of translation and the important role of



specialized translators . All aspects of our lives has been greatly affected by the new inventions, devices and technological advancement. Thus, translation is the engine that moves the vehicle forward toward more understanding and modernity. Technical translation is one important branch of translation, and it plays a great role as a profound field of study and has great tangible scientific effect. Globalization in its positive scientific side has never come true without that important role of translators. According to Byrne (2012), there is a slight distinction between both technical and scientific translation. Byrne (2012:3) has shed light on the importance of both technical text and scientific text and has stated that,

"while technical text is designed to convey information as clearly and as effectively as possible, scientific text will discuss, analyze and synthesize information with a view of explaining ideas, proposing new theories or evaluating methods."

As a result of this deep vision, the importance of translation plays an intermediate role between different nations which transfer and spreads the knowledge among them. Byrne (ibid) has commented that technical translation is that complex activity where knowledge about a variety of scientific subjects in different languages are exchanged and communicated. It requires experts in linguistic knowledge and writing skills, combined with the ability to research and understand complex concepts and present them to a range of different audiences.

There is no place for individualism, style, metaphor, and creativity in technical language. Newmark (1988) has mentioned that technical language is usually free from emotive language, connotation, sound-effect and metaphors.

Technical term translation represents one of the most difficult tasks for translators since most translators are unfamiliar with the new terms which are not also printed and found elsewhere directly in contexts. In that, technical translation needs specialized translators.

Glover and Knight (1998: 34) have said "it is challenging to translate names and technical terms from English into Arabic. Translation is usually done phonetically: different alphabets and sound inventories force various compromises." This is called "transliteration" equivalence where the English alphabet corresponds with the characters of the Arabic language alphabet. This kind of translation is widely used among specialists in particular and used also when there is no direct equivalence in the Arabic language for the English term.

Fug P. and Keown K. (1997) have stated that technical terms cannot often be translated on a word-by-word basis. Sometimes, the meaning of a term in one language does not have a direct equivalence in another language or even the same structure. As a result, translators of technical materials, who are not experts in every technical or regional domain, would face a serious difficulty in producing the correct translation of technical terms effectively.

Newmark (1988) has explained that technical translation is one kind of specialized translation, but it is really universal as far as it is used widely by many speech communities. Since a technical language is very different from ordinary language, the language that is commonly used to deal with the basic aspects of everyday life, a competent specialized translator has to be aware of all scientific developments of his /her field of study and how to use the accurate translation strategy so as to coin the new terms of the ST in the TT. Tagliacozzo (1975: 95) has said the large number of specialized languages which has resulted from the rapid development of modern sciences and technology may create barriers of understanding between different levels of competence and specialization"

Technical language is only known to specialized people or to a small number of people, which can be learned through certain ways of training. Clearly, technical translators need enough experience in the SL in different language matters so as to transfer the exact intended meaning into the TL accurately. Newmark (1988:151) argued that "the profession of translator is co-extensive with the rise of technology." In fact, technical translation is a continual upgraded field of study because there are almost always new terms every day in every scientific field.

Halliday, M. & Martin, J. (1993) [Language science, specialized Language]Retrieved on November 23, 2015 from: [http://arbs.nzcer.org.nz/supportmaterials/language\\_of\\_science.php](http://arbs.nzcer.org.nz/supportmaterials/language_of_science.php) have stated that "technical words

are specific to a particular topic, field, or academic discipline. These words are the scientific meanings which are usually uncommon elsewhere."

Scientific or medical translation is universal and it is part of human urgent need in the globe since the world always needs to know every new scientific development. Some other writings are regional related to a certain time, place or event. In that, Pinchuck (1977:13) has explained that "Scientific and technical translation is part of the process of disseminating information on an international scale, which is indispensable for the functioning of our modern society." (as cited in Jody Byrne, 2012:1). A large number of English new terms are continually required to be coined in Arabic which creates that vital and important role of the translator.

As has been illustrated, scientific writing and the language of science have been widely discussed and investigated by many scholars and researchers all over the world because they occupy an important field of study, combined with that challenge of the technical translation nature. Technical language is greatly different from everyday language because it has its own lexical, semantic, and syntactic style. Since technical language is different from everyday language style, there should be a comprehensive and deep focus to distinguish between them. Since technical language is very difficult to be comprehended by ordinary readers, it can be presented by translators through different translation strategies.

When considering the language of science and how it is presented in different languages, Hutchinson & Watars (1987) explained that there are

important differences between technical language and general language, in vocabulary and the higher frequency of some grammatical style (as cited in Towaim. 2007:2)

It can be observed that technical language needs special readers because the ordinary readers of the general language are not fully aware of the grammatical and lexical meanings. Parkinson (2000) believed that the text is considered a scientific text when there is a real difference between the particular genres in vocabulary, grammar and discourse structure (as cited in Towaim. 2007:2)

As the accuracy of technical translation is based on the translator's best comprehensive understanding of the ST the translator should also have acquired the meaning of the cultural elements and detect them in a way that contributes to the text accurate translation. This is possible by putting down implicit cultural references to certain structure on the text level. Cultural elements appear in the text on all levels – from the concept and form of words, to the sentence and text structure and pragmatics. The translator should have a comprehensive view of the text and should consider the relevant cultural elements discourse field, conceptual world and predicative mode to promote his/her understanding of the target text. The TL formulation then observes the medium, stylistics, coherence and function of the text. Dealing with cultural elements may be motivated in view of the aforementioned categories of attention.

## **2.4 Characteristics of Medical and Dental translation.**

### **2.4. 1 Historical overview of medical translation:**

Montalt (2007) has explained that the need for translation started first when people all over the world got involved in trade, so there was a need to create a communication among traders who had gathered from different countries and used different languages. Hundreds of years ago, the Greek city of Pergamum in Asia, Minor became another important Centre of scholarship and produced "Galen," one of the most important exponents of Greek medical knowledge. He wrote four hundred works. In the 9 century many of his works were translated into Arabic in the House of Wisdom in Bagdad which greatly contributed to the medical knowledge. Later, it was translated into Latin in the 11<sup>th</sup> century. During the Middle Ages, the monks largely produced knowledge of medicine. We know that the early translations, according to Cicero, were not word for word but sense for sense, and so the very early medical translation followed the same strategy. These two strategies of translation are still being used. Latin was the *lingua franca* of translation. Two kinds of translations were practiced between Latin and vernacular languages used by traders and among vernacular people themselves. The need for a *lingua franca* appeared in the seventeenth century because many scholars wanted to spread their work all over the world.

Since the middle of the 20<sup>th</sup> century, Reiss and Vermeer (1984/1991) and Nord (1997) have contributed significantly to translation and especially

to medical translation. They related language to the context and the circumstances under which the utterance got its meaning. Although English has become *lingua franca* over the last decades, it is not the only language of production in all scientific fields nowadays.

Byrne (2012) argued that translation is very old and is as old as writing itself. When people started writing, they also started translating in different areas. Some say that it is the second oldest profession known to humanity. In fact, technical translation history is as old as religious texts such as the Bible or the Holy Qur'an. It is very clear that every significant scientific and technological discovery in all ages has been transmitted to another language through translation. Translation has always facilitated the spread of knowledge. Besides, the invention of printing in the 15<sup>th</sup> century had had its impact on translation and also had facilitated the dissemination of scientific knowledge in all aspects in large number of books produced in Europe. In the last 100 years, scientists have made countless new discoveries and have written in their native languages. Many scientists in other parts of the world were eager to acquire the new knowledge, so there was then a need for technical translation. Clearly, scientific and technical knowledge has the most vital role in developing translation in comparison with other scientific fields.

At the same time, many centuries before the invention printed manuscripts, the text handwriting was used and there was a serious modification between the original text and the new handwriting one

especially in scientific texts. Moreover, the problem became more complicated with translation because there were no accurate standards in translation.

Montalt (2007: 15) has said that "the exponential increase in international communication and the surge of globalization in the business world will lead translators to play a larger and more visible role, and will require increased systematic training of specialized translators. " Obviously, technical or medical translators always need constant training so as to keep abreast of new developments and inventions in the field of medicine and to absorb the doctrine of globalization which spreads knowledge rapidly all over the world. Because of the vast and rapid development in medical sciences, the necessity for medical translation has become very imperative. This is the reason why medical language is of special and unique one.

Montalt (2007) has explained that despite the fact that English has become a *lingua franca* of distribution, biomedical researchers all over the world write in many different languages and try to get their work accepted by international journals published in English through translations. Legal requirements for documentation of medical products in the European Union as well as general trends towards internationalization have also increased the need for translation. In addition to this, there are bilingual editions of medical journals along with monolingual publications in all languages. Thus, the existence of *lingua franca* does not necessary reduce the amount of translation. As has been mentioned earlier, most professional translation in



the field of medicine or related areas involve English either as SL or as a target language.

Herget and Alegre (2009) defined medical language as language which has a particular purpose which is definitely different from everyday language.

Asmah Hj Omar (1975) states that standardization of scientific and technical terms can be achieved for the following reasons:

- a) The number of non-technical words in a language is greater than technical terms.
- b) The rise of scientific and technical terms in a language is due to proper planning in coining terms.
- c) The usage of the newly coined terms is mainly restricted to specific fields.
- d) The terms have one meaning in one field but something else in another ('morphology' is found in biology and linguistics and yet it has its own definition within each respective field).(as cited in Quah1999: 607)

#### **2.4.2. Medical and Dental Terminology:**

No doubt that dental terms translation from English into other languages may be a challenge for translators. The minorities definitely face some difficulties in understanding these terms because there is no exact

equivalence for each new dental term in their languages, so the improper translation for these languages causes ambiguity and confusion.

Dental terms have the same language original words in Latin and Greek. Haddad (2008: 5-6) has explained that the medical terms are mainly derived from Latin and Greek origins. They consist of the following parts:

1. Words using a prefix and a free root:

<b>Prefix</b>	<b>Root</b>	<b>Example</b>
Semi-	Final	Semifinal
Pre-	mature	Premature
hyper-	active	Hyperactive

2. Words using a root and a suffix

<b><u>Root</u></b>	<b><u>Suffix</u></b>	<b><u>Example</u></b>
Tonsil	-ectomy	Tonsillectomy
Bronch	-itis	Bronchitis
Psych	-ology	Psychology

3. Words made up of two roots (compound words)

<b><u>Root</u></b>	<b><u>Root</u></b>	<b><u>Example</u></b>
Head	Ache	Headache
Hydro	Therapy	Hydrotherapy
Broncho	Pneumonia	Bronchopneumonia

## 4. Words using combining form:

Cardiovascular      Gastrointestinal

## 5. Words using bound roots only:

<b>Prefix</b>	<b>Suffix</b>	<b>Example</b>
An-	-emia	Anemia
Ex-	-cise	Excise
Poy	-uria	Polyuria

## 6. Words using prefix, root, and suffix:

<b>Prefix</b>	<b>Root</b>	<b>Suffix</b>	<b>Example</b>
Super-	Nature	-al	supernatural
Un-	Lady	-like	Unladylike
Peri-	Card	-it is	pericarditis

Clearly such terms need special translators with high qualification in linguistics to give their proper equivalences in Arabic or other languages.

More and more dental terms are introduced and used daily by dentists when they communicate with specialists and non-specialists. Some terms are familiar to the dentists and to the technical translators as well, but many other terms are newly coined in the world of dental science and need to be followed up.

Since the main dental terminology source language is English, it is a must then to rely on recommended authentic reliable dental terminology sources to determine the range of translation accuracy. Dental terms translation must be equivalent to the original meaning of the SL to avoid ambiguity and confusion or any other serious medical results.

It is universally well known for granted that English language is the *lingua franca* of medical or dental language as mentioned earlier. This means that it is the main source of medical terminology. This leads the researcher to investigate the degree of dental translation accuracy from English into Arabic through studying and analyzing the different translations of a number of dentists. No doubt, English is the most common language in the world and this wide spread has created that importance of translation from or to English into other languages specially Arabic language which is also widely used among all physicians.

In general, machine translation is not recommended in this regard because the output is inaccurate semantically and pragmatically.

## **2.5. History of Medical and Dental Arabic Translation:**

Dentistry art has existed long in history. Humans cared about their teeth many centuries ago and there is some evidence that since early times, Arabs had cared about their teeth. Many significant studies showed a big interest in dental surgery. The very early Muslims in Mecca cared about their teeth and Prophet Mohammad (peace be upon him) urged his

companions to practice tooth brushing (As-siwak) which is still being used today in the Muslim world and even in foreign countries as well.

Haddad (2008) argues that the Arabs were pioneers in scientific and literary translations. The movement of translation started in Bagdad when the Arabs started translating Greek and Indian philosophical books into Arabic during the rule of Al-M'amun in the 9 and the 10 centuries. Khalid BiYazeed was the first to work in translation and his main concern was Kemia. Then during the Abbasside era, medical sciences continued flourishing in Bagdad under the rule of Abu- Jafar Al-Mansour.

Ead (1998) points out that the west was not objective regarding the influence of Muslims on the historical development of medicine. Western writers have given little credit and prominence to Muslim scholar's scientific and intellectual contributions to the field of medicine in general. It is universally acknowledged that Muslims carried the torch of science and thought in an age when no other civilization was able to do that. In Europe, at one time, learning was regarded as heresy, and the Eastern Christian Church persecuted all scientists. They fled to the Islamic Empire which was the only refuge for them, and the Islamic Empire in turn acquired from them scientific heritage of the time. They were given a great deal of veneration and respect by Muslims, and were allowed to develop their learning in a comfortable atmosphere. That was the beginning of a universal cultural revolution which enlightened the ancient world, and which the West later

embraced, inheriting from the Muslims their scientific and intellectual achievements.

The medical knowledge which the Arabs had had in the pre Islamic time was very little, due to the unsettled situation in their regions. Mecca, Medina and Al-Ta' if, were the only civilized towns located near oases. The only contact of Arabs had had with the civilizations of other countries was through the trade caravans which made bi-annual trips from Mecca, traveling to Syria in the north and to Yemen in the south. At the same time, there were some medical practitioners in pre-Islamic times, such as Ibn Huzeem, Harith Ibn Kalda al-Thaqafi, Ndr ibn Harith and others.

Ead (1998) has pointed out that the only drugs the Arabs knew at that time came from plants and the leaves of trees, certain pods, animal bones, and spice and incense. Arabs at that time used to live light on a simple food, and this had protected them from many diseases. It happened that in the first days of Islam, the ruler of the Copts in Egypt once sent presents, including an Egyptian doctor, to Prophet Mohammed (peace be upon him). The Prophet kept the presents but sent the doctor back, with this message: "We have no need for doctors, for we are people who eat only when we are hungry, and when we eat, it is never to excess."

The sources of medical knowledge for the Arabs was mainly from ancient civilizations, such as Egyptian and Byzantine and Persian empires. Medical knowledge flourished in ancient Egypt, and some of the drugs which were used then are still used now. Hippo Crates was Among the

ancient Greeks and the first physician of prominence; he is considered the father of medicine. Egypt was the center of medical learning once again from 271 BC when the School of Alexandria was set up.

The development of medical science in the Islamic era started when Muslims spread and were keen to collect all that was available to them of manuscripts and books of the ancients. Baghdad came under the rule of the Abbasids and Cordova under the Umayyads, and these became world centers for learning and particularly for medicine. Among the famous physicians of Umayyad times were Ibn Uthal and Abu al-Hakam al-Dimashqi. Translation into Arabic began under the rule of the Umayyads in the time of Prince Khalid ibn Yazid. The great Arab chemist Jabir Ibn Hayan (Geber), became an expert in chemical procedures.

Once again, medical or dental terminology translation is of great importance because we are in need of this universal and important genre for humane safety and development. Any translator or dentist must be aware of the exact equivalent of the dental term to avoid ambiguity and always keep in mind that the language of science is different from other language genres.

## **Chapter Three**

### **Methodology and Theoretical Frame**

#### **3.1 Introduction:**

This section is an overview of the methodology used in the thesis, such as pilot study, interviews with a number of dentists and some dental texts analyses. It also focuses on the frames that have been used to collect the data which is the main base of the study. Moreover, it discusses the most common equivalences and strategies of medical translation.

#### **3.2 Description of the Study:**

Just as the foundations support and decide the shape of a building, a theoretical framework provides the rationale for predictions about the relationships among variables of the research study.

This chapter discusses the methods and procedures that are used to collect the data which are necessary for the thesis analyses and then come up with the necessary results and recommendations. This chapter also includes the districts of the respondents and some other necessary information about them that are vital for the study analyses. The chapter displays the necessary sources of the data include mainly the pilot study, dental texts analyses and short interviews with a number of dentists.

#### **3.3 Tools and Data Collection:**

The crucial first concern of the study is to find out the difference between conventional and technical translation inaccuracy in the translation



of dental terms from English into Arabic. The dental texts and terms are translated by a number of dentists. A number of significant discrepancies have been observed and analyzed about these different translations. The second aim of this study is also to absorb beneficial results about the importance of accurate translation of the dental terms to both specialists and non-specialists combined with the best required sources that the dentists can rely on in dental translation, beside the recommended dental translation strategies. Third, the effect of the different translation strategies that are followed, either between dentists themselves (specialists) or between dentists and patients (non-specialists) on the other hand, asymmetrical talk, on dental translation accuracy.

The target dentists are mainly from Nablus City, who learned dentistry in different institutions, and the Arab American University in Jenin. Moreover, some personal interviews are conducted with a number of dentists.

### **3.4 Population & Sample of the Study:**

The sample of the study consists of 100 dentists, 65 dentists from Nablus and 35 undergraduate students from the Arab American University in Jenin. Apparently, not all targeted dentists have received their education in English language. The Arab American University in Jenin is one sample that proves that Palestinian universities use English language in their medical faculties, but at the same time not all Arab universities use English language as a learning language. Clearly, the targeted dentists from Nablus City have not received their education in English language only, which

means that not all dentists in Palestine receive their dentistry education in English only. As a result, the sample that covers the study may be considered as a systematic and may make the problem clear and convenient for the study and analytic calculations.

The respondents were asked to translate 20 dental texts from English into Arabic. The texts include a large number of problematic translation areas of the dental terms which can be an actual sample for the study. The dentists were asked to translate the whole texts to find out how they do translate the intended meaning of the whole dental text first, then observe and analyze the different translations of every dental term. The dentists were also asked to mention their institutional background and the number of years' experience so as to find out the effect of these factors on the of translation accuracy range, compared also with the translation results of the undergraduate students from the Arab American University in Jenin. Although the language of dentistry is universal, not all dentistry faculties use English language as a language of dentistry teaching. Therefore, the institutional background of the dentists has a tangible effect on the dentists' accurate translation degree of the English dental terms into Arabic language, and so there is a variation between the dentists themselves. The dentists who have graduated from East Europe, Russia, Ukraine or Syria in particular face some difficulties in English medical terms translation accuracy. However, many dentists have argued that they face some difficulties in using "Arabicization" equivalence in dental terms translation.

### 3.5 The Procedures of the Study:

The data of the study has been collected from translated dentistry terms by different dentists from Nablus, and the Arab American University in Jenin. Different inaccurate areas of the dental terms translations have been observed through comprehensive analyses in the pilot study. Moreover, other translated dental terms from English into Arabic, either in dentistry conferences or other dental texts, have been also examined in the pilot study which have shown translation inaccuracy.

The main authentic sources that are used in the study are:

First, (*The Unified Dictionary of Dentistry English-Arabic*, 2009) The Arab Health Ministers has adopted the initiative of Union of Arab Doctors in the late sixties in the previous century in publishing (*The Unified Dictionary of Dentistry English-Arabic*, 2004) and continue its modernization in coordination with the Director General World Health Organization to produce the Arabic program for the organization.

Some points about the two dictionaries can be pointed out in this concern as follows:

**First**, *The Unified Dictionary of Dentistry English-Arabic*, 2004).

2004. *The Unified Dictionary of Dentistry English-Arabic.com*. Translated and retrieved on February 3, 2106 from:

<http://applications.emro.who.int/dsaf/dsa563.pdf>

1. It uses just one Arabic word for the English expression, but other synonyms are not used unless it is very necessary in order to make the translation unified.
2. If there are many foreign synonyms for the same dental term, for historical reasons, it just translates its original meaning.
3. It uses the common words in Arabic or that were previously used by Arab scientists.
4. It uses transliteration equivalence for exotic words because it is difficult to find an Arabic equivalence for these terms.
5. It works hard to make the term Arabicized so as to be easier for Arabic language derivations.
6. It considers the Arabicized term an Arabic term which follows the Arabic structural rules.
7. It is committed to choose the easiest exotic terms from all foreign languages such as Latin, French and English without being restricted to only one foreign language so as to be also easier in the Arabic language.
8. It translates species names in the taxonomy of animals and plants, but microbes are not Arabicized.

**Second,** ( *The Unified Medical Dictionary*,2009) (المعجم الطبي الموحد)

2009. *The Unified Medical Dictionary*.com. Retrieved on February 3, 2106 from: <http://www.emro.who.int/Unified-Medical-Dictionary.html>

The following is an introductory about what has been said about this dictionary.

“The Unified Medical Dictionary (UMD) is a multilingual medical dictionary. The first edition was issued in the 1960s by the Arab Medical Union in Baghdad, Iraq, to meet the urgent need in Arab countries for unified medical terms. Since 1973, the year of the third edition, WHO has taken the lead in maintaining and developing it, with valuable contribution from the Arab Health Ministers’ Council, Arab Medical Union and Arab League Educational, Cultural and Scientific Organization (ALECSO). A specialized committee of experts was set up to collect, verify and add to the medical terms. The committee receives feedback, comments and information from experts and professionals from all over the Arab world, as well as medical terms approved and issued by the Arab academies in Cairo, Damascus, Amman and Baghdad.

The UMD is available in print, on CD and on the internet. The fourth edition of the UMD contains more than 150 000 terms in English and Arabic. Most of these terms are available also in Farsi, French, German and Spanish.”

It is really the first dictionary that introduces the medical terms in Arabic language. It provides an opportunity for those who are not

specialized in Medicine to have an access to medical sciences from the inside so as to recognize the diseases, their causes and their newly coined names, particularly associated with the names of their discoverers of Western or other scientists. Moreover, it illustrates the classifications of the diseases and their types the various disciplines, the symptoms that we feel and the symptoms that we do not feel.

Third, another important authentic source is (*Oxford Study Dictionary, 2010*) which is mainly used by the students of dentistry specially in Arab American University in Jenin.

Pilot study is the main data collection in this study in addition to personal interviews with a number of dentists. The targeted dentists graduated from different universities and from different countries as has been mentioned earlier. They were asked to translate some controversial dentistry terms through contexts and the researcher focuses on both the whole translated text and then the dental terms in each context to find out the discrepancies between the different translations, and recognize the kind of problem whether it is really technical or conventional. The researcher has classified the translated terms according to the type of inaccuracy, and the inaccuracy created by the difference in technical and conventional translation. In the following chapter the first section will discuss the inaccuracy of technical and conventional translation of the dentistry terms. Some dentists and translators fall in real technical problem when translating

these terms into Arabic. It is clear that the institutional background also has great effect on the accuracy of translation.

It is necessary for all dentists to understand the English dental term in their native language so as to understand the gist of its message and get its exact crucial meaning.

This study is concerned with assessing different aspects and dimensions of translation inaccuracy of dental texts and terms which shows discrepancies between the translated contexts either by dentists or other translators from English into Arabic.

The mainly used frame in translation is to gauge equivalence between ST and TT and to investigate the problematic translation areas to come up with a possible solutions for this problem.

### **3.5.1 Interviews with Dentists:**

The researcher has conducted some personal interviews with experienced dentists about the use of dental terms in terms of its importance to both dentists and patients in English and Arabic. They have provided the researcher with a significant guideline about dental terms translation from English into Arabic. Moreover, the questions were mainly about the importance of translating dental terms use between dentists themselves and between dentists and patients. In addition to this, they have been asked about the main references they use in understanding the dental terms. One of the aims of this study is to discover the types of equivalences that are used

among dentists when translating English terms from English into Arabic. They have confirmed that they usually use transliteration equivalence in most of their communication, then comes the second equivalence which is descriptive translation. A few number have said that they have used Arabicisation in translating dental terms which has the most common and known problematic area.

### **3.5.2 The Questionnaire:**

Conducting pilot study is the main data collection method used in the study in addition to other dental translated texts analyses. The questionnaire included a large number of dental terms introduced through texts which have problematic translation inaccurate areas. It is the way to reach a reliable data through a comprehensive study about inaccuracy in dental terms translation. The dentists have been asked to translate a number of dental terms from English into Arabic. The first section of the questionnaire includes general information about the dentist especially his/ her experience period and the institutional background which is very important to come up with the required results as follows:

The main aim of the first section is to find out the effect of both experience and the institutional background on the dentists translation accuracy of the dental terms from English into Arabic. This questionnaire covers the regions of Nablus and the Arab American University in Jenin.



In the second section, the respondents have been required to translate 20 texts that include a number of problematic dental terms when translated from English into Arabic. The translation of the terms has been analyzed to find out the different kinds of problematic areas. It was found that many terms have not been translated in the same way or in an inaccurate way. The questionnaire has been analyzed and the researcher tries to figure out the types of inaccurate translation areas and the reasons behind that. Moreover, the questionnaire has tested the regional effect of the accurate translation from and Nablus and the Arab American University in Jenin.

### **3.6 Statistical analyses:**

The 100 copies of the questionnaire were collected and analyzed depending on the previous mentioned dental sources: *The Unified Dictionary of Dentistry* and *The United Medical Dictionary*. The translated dental terms are presented in different table- analyses that include different translations by dentists compared later with the translation of UDD and UMD. Finally the tables also include the use of different translation strategies which clarify the negative effect of using different translation strategies for the same term.

## **Chapter four**

### **Data Analysis and Discussion**

#### **4.1 Introduction:**

Byrne (2006:1) believed that “technical translation has long been regarded as the ugly duckling of translation, especially in academic circles.” At the same time, technical translation represents the tool that manages people all over the world to exchange different domains of knowledge and science. Medical translation is considered an important branch of technical translation because it is the language of medical science which is vital for every human being. Wells, et al., (2008:5) stated, "To convey information effectively, technical communication must be accurate, clear, and concise. If the audience cannot understand or use the information presented, the writer has failed in his or her purpose."

Medical terms in general are of that special nature. In this concern Chabner (2010:3) argued that, “studying medical terminology is very similar to learning a new language. At first the words sound strange and complicated, although they may stand for commonly known disorders and terms.”

The researcher is going to find out and analyze the inaccurate areas committed in the translation of dentistry terms or texts from English into Arabic in different aspects, translated by a certain regional number of dentists. Besides, the researcher is will try to determine the most suitable or

successful sources and methods of dental accurate translation. Moreover, this chapter discusses and analyses the problems and hindrances that may face the translators of dental terminology translation. Consequently, through the vast investigation of the dental terms translated from English into Arabic, there have been found different causes and types of translation inaccuracy. This chapter also includes a comprehensive analysis of the pilot study in addition to personal interviews with a number of dentists about dentistry terminology translation. Besides, the study has also discussed what the accurate translation should be depending on the most successful dental translation sources. This chapter also discusses the attitudes of the targeted dentists about dental translation and its importance to them in particular. The study also investigates the three main strategies that are used in medical terms translation in general which dentists usually follow in dental terms translation from English into Arabic. These strategies are: transliteration, Arabicisation and descriptive. The outcomes of the study are based mainly on the types of translation inaccuracy depending on the pilot study results and the personal interviews investigation.

Through analyzing the pilot study in this chapter, the researcher tries to identify the main types of inaccuracy of dental terminology translation from English into Arabic and to identify the differences between the accurate *technical* and *conventional* translation rules. In addition to this, the study discusses the pilot study results in the light of both technical and conventional translation rules. Moreover, the chapter includes the dentists' points of view concerning the most appropriate equivalence in the

translation of English dental terms into Arabic between the dentists themselves and between dentists and patients which is generally called asymmetrical talk. Finally, the results of the study are discussed under the following headings:

1. The different inaccurate areas in dental terminology translation from English into Arabic.
2. The most appropriate sources that are recommended to depend on in dental translation from English into Arabic.
3. The regional effect of the targeted dentists on the translation accuracy range.
4. The effect of the dentists' experience on the dental translation accuracy.
5. The effect of the dentists' institutional background on the range of the translation accuracy.

The whole study results are mostly dependent on the range of accuracy of the dental terms translation in the pilot study combined with the personal interviews results. The dentists were asked to translate a number of dental texts which included a number of problematic areas-when translated from English into Arabic. Besides, a number of personal interviews with the dentists were conducted on the subject. The researcher discusses the types of inaccuracy and the translation strategies that were used between dentists themselves and between dentists and their patients on the other hand.

## **4.2 Types of Dental Terminology Translation Inaccuracy from English into Arabic:**

Darwish (2009:30) defines terminology as, "the process, methodologies and activities which produce or standardize terms and the actual outcome of these activities-that is the terms themselves." It is generally acknowledged that the translation of dental terms from English into Arabic may be of great challenge for translators in general and for dentists in particular. In fact, it requires a highly background knowledge of dentistry science and the most up-to-date developments in the field. Besides, these terms sometimes carry more than one meaning in Arabic language and it is the role of the dentist or the translator to find out the required Arabic equivalence. Moreover, the dentists have to keep up with the vast newly coined dental terms in the English language which creates the importance of dental translation studies.

Glover and Knight (1998) argued that "translators must deal with many problems, and one of the most frequent is translating proper names and technical terms".

The main discrepancies that have been observed in the pilot study are mainly located in the failure selection of the required exact equivalence of the dental term in the TL or because of the misuse of the different mentioned strategies in medical translation in general. In fact, medical terms translation represents the most difficult task for translators because many English medical terms lack a direct equivalence in Arabic language.

#### **4.2.1 Descriptive, Arabicisation and Transliteration equivalence:**

First, these are the recommended technical translation equivalences that translators usually follow to find out the accurate equivalence in the TL. At the same time, the use of different equivalences for the same term can cause a serious ambiguity or inaccuracy in dental terminology translation especially among dentists who have learned dentistry in different languages. The kind of the medical or dental term should decide the selection of the dental term translation equivalence. Second, using just one medical translation equivalence for all medical terms often leads unsatisfying translation results. The most common technical translation equivalences are: Arabicisation, descriptive and transliteration. Medical and dental dictionaries such as *Unified Medical Dictionary: 2009* and *Unified Dental Dictionary: 2004* could be considered as real technical translation sources which mostly use the Arabicisation equivalence. Arabicisation in the concept level is when SL concept is loan-translated into Arabic. The second translation equivalence is descriptive translation where the translator or the dentist uses many words or even a whole sentence to describe one English dental term. The last equivalence is transliteration where the dentist transfers a word from English to a word in Arabic without any changes using the same English language alphabets but in Arabic alphabets. All of these equivalences are widely used in medical or dental translation terms. In fact, each translation strategy is followed by dentists either according to his/her institutional background or according to his/her interlocutor. Since most of the targeted dentists have received dentistry in English, the majority of them

used transliteration when they communicated with specialists. However, they used descriptive -asymmetrical talk- with patients or laymen. As it has been mentioned earlier, using a mixture of translation equivalences can cause serious translation problems which are very apparent in the pilot study results. The following table shows a real translation problem because of the use of different translation equivalences for the same term which leads to translation ambiguity and confusion.

**Table (1): Terminological Translation Equivalences: Descriptive vs. Arabicisation and Transliteration.**

Medical term	Descriptive	Arabicisation	Transliteration
Enuresis	انقطاع البول	زرام	أنيوريسيس
Acromegalia	ضخامة الالتهابات	عرطلة	أكروميغاليا
Collutory	غرغرة مضمضة	طلاء الفم	كليودري
Desequestration	عودة الدم للدوران	إزالة المحتجز	سكوستريشن

Clearly, some dentists were not fully aware of the three translation equivalences and it is not recommended to use them simultaneously which could cause serious ambiguity. Choosing the translation equivalence depends mostly on the dental term nature and the institutional background of the dentists.

Table (2) presents some examples about descriptive and Arabicisation translation that are used in *The Unified Medical Dictionary*2009 or *The Unified Dictionary of Dentistry*2004

**Table (2): Terminological Translation Equivalences Descriptive vs. Arabicisation.**

No.	Dental term	Descriptive equivalence	Arabicisation equivalence
1.	Ebonation	إزالة قطع العظم من الجرح	إنضار العظم
2.	Emeiocytosis	، قذف المواد من الخلية	ايماس
3.	Epulis	ورم او انتفاخ اللثة	ورم لثي
4.	Carotenosis	وجود الكاروتين في الدم	الكاروتينية
5.	Code	مدونة، دستور	راموز
6.	Confection	دواء محلى	أنبج

Some dentists maintained that they usually used simplified descriptive translation equivalence for the English dental term specially when communicating with laymen or non-specialists, but they use transliteration equivalence for the dental term especially with specialists, but the majority of them did not give any importance to Arabicisation translation. At the same time, the use of both Arabicisation or descriptive for the same term often caused some kind of confusion or ambiguity especially for different dentists who came from different institutional backgrounds. For example, the dentists who learned dentistry in Syria often tend to use Arabicisation rather than descriptive or transliteration, whereas those who learned dentistry in countries whose native language is English tend to use transliteration. However, the use of a certain translation strategy should be selected according to the type of the term.

Clearly, the use of Arabicisation was not common among dentists. Many argued that this kind of translation was rare because most universities used English language instead of Arabicisation and there was no need for the



use of an Arabic equivalence for the term. At the same time, the dentists who received their education in other languages usually used neither English nor Arabicisation. Instead, they used descriptive translation because they did not use to learn the original dental term neither in Arabic nor in English. Moreover, an increasing number of dentists used transliteration instead of Arabicisation or descriptive with specialists as has been mentioned earlier. Therefore, a serious translation problem was the result. The following table shows how the dentists translated the following dental terms in the personal interviews. They supported descriptive translation when communicating with non-specialists and used the transliteration strategy when communicating with specialists, but the majority of them didn't mention the use of Arabicisation strategy. Table (3) shows the Arabicisation translation according to UDD and UMD.

**Table (3): Terminological confusion and ambiguity in relation to descriptive vs. Arabicisation vs. transliteration translation.**

No.	Dental term	Descriptive equivalence	Arabicisation equivalence	Transliteration equivalence
1.	Burs	حفارات	أزير	البيرس
2.	Cephalometrics	صورة مقطعية	قياسات الرأس	سيفالو
3.	Profile	منظر جانبي	شاكلة للصورة الشعاعية	البروفيل
4.	Composition	حشوة تجميلية	تركيب	كوبوزيشن
5.	Hand piece	قبضة		الهاندبيس
6.	Apex	ذروة الجذر	قمة	الابكس
7.	Scalar	مقلعة اسنان	مقلحة أسنان	سكيلر
8.	Panoramic image	صورة بانوراما	بانورامي	بانوراما
9.	Bonding	مادة لاصقة	الصاق	بوندنج
10.	Elevator	أداة الخلع	رافعة	اليفيتر
11.	Forceps	زرادية	ملقط	الفورسبس
12.	Veneer	عدسات الاسنان	كسوة خزفية	فينير
13.	Cement	مادة الصاق	ملاط	السمنت
14.	Suction	الماصة	مص	السكشن
15.	Needle	إبرة	ابرة، حقنة	النيدل

Table (4) below, also shows the large difference between both Arabicisation and transliteration.

**Table (4): Terminological confusion and ambiguity in relation to Arabicisation vs. transliteration translation.**

No.	Dental term	Arabicized equivalence	Transliteration
1.	Dentition	تسنين	الدنتيشن
2.	Edentulous	عديم الاسنان	اندنتلس
3.	Quadrant	الربعية	الكوادرنانت
6.	Enamel	مينا	اناميل
7.	Cementum	الملاط	السمنتم
8.	Dentin	عاج	الدنتين
9.	Pulp	لب	البلب
10.	Interproximal	التلاصق	الانتربروكسيمال
11.	Mesial	أوسط	الميزل
12.	Buccal	فحوى	الباكال
13.	Occlusal	الإطباق	الكلوزال
14.	Distal	القاصي	الدستال
15.	Facial teeth	الأسنان الوجه	الفيشل تيث
16.	Spectrum	مطياف	سبكتروم
17.	I-lingual	ل-لساني	
18.	Clinical crown	تاج سريري	اكلينيكال كراون
19.	Gingiva	اللثة	الجنجيفا
20.	Caries	النخر	الكاريس

#### **4.2.2. Conventional vs. Technical Translation Inaccuracy:**

First, there is a need to use different translation techniques in dental terms translation because of the difficulty of finding an alternative

equivalents in the TL. There are some techniques that are used to help the technical translators find out the convenient equivalence in the TL:

1. [loan translation] (n.d). Retrieved on February 5, 2016 from: <http://www.thefreedictionary.com/loan+translation> "A form of borrowing from one language to another whereby the semantic components of a given term are literally translated into their equivalents in the borrowing language."

Richards and Schmidt (2013: 346) defined 'claque' as "a type of borrowing, in which each morpheme or word is translated into the equivalent morpheme or word in another language." This technique is regarded as a 'transliteration' translation strategy. Catford (1965: 66) explained that "transliteration is a process in which SL graphological units are replaced by TL graphological units." For example, the English term 'Sonar' is translated into سونار in Arabic. 'Fluoride' is translated into فلورايد also and so on. This translation equivalence is widely spread among doctors and dentists as well when communicating with each other either because there is no direct equivalence in Arabic for the English medical term or the dentists ignore the use of Arabic equivalence.

2. In other cases 'compound' translation is used where many words are used in the TL to translate a word in SL. For example, 'mouth-rinse' is غسول الفم in Arabic.

3. The use of acronyms among doctors or dentists is very common. This creates a serious translation problem that encounters the translators and the dentists as well. For example, the abbreviation 'OH' (Oral Hygiene) and it stands for Oral Health too. This translation technique represents a serious obstacle for translators in general because it is sometimes difficult to observe the real intended meaning of the given acronym. Moreover, the frequent use of acronyms by dentists create a serious translation problem, they usually transliterate acronyms instead of giving its original term meaning, اورال هاي جين or او اتش. This technique of translation is widely used among dentists on the expense of Arabicisation. Using abbreviation constantly causes a complete forgetfulness of the original term.

Through the thorough investigation and through studying the different dental terms that are translated from English into Arabic in the pilot study, the researcher has come up with two main areas of inaccuracy: *technical and conventional*. First technical rules are the rules that the translator should follow in the translation of technical or dental terms from English into Arabic. The technical translator must possess the relevant knowledge and training in the subject of translation. Besides, the translator is required to have a constant and regular update in both SL and TL basis. Moreover, the technical translator should be native to the target language and familiar with the culture.

[What is Technical Translation] (n.d). Retrieved on February 7, 2016 from: <http://www.mtlinguasoft.com/what-is-technicaltranslation/> "technical translation is the translation of materials dealing with scientific and technical subjects and using the specialized terminology of the scientific or technical field involved."

In fact, it requires a well specialized translator with good understanding and knowledge in both SL and TL. In contrast, “conventional rules” include syntactic, semantic, grammatical rules of a language.

This study is also an attempt to find out the best and the most successful translation rules for the dental terms through which the dental term translation can express the exact intended meaning of the ST. These findings can also be applied to the translation of technical literature in general.

The dentists were asked in the pilot study to translate a number of dental texts from English into Arabic to find out whether they really transferred the intended meaning of the source language into the exact target language meaning in an accurate way or not. As a result, some dentists commit some translation mistakes which cause ambiguity and inaccurate translation. Table 5 shows different translation errors that were committed by dentists.

**Table (4) Dental terminological inaccuracy in relation to some dentists' translations.**

No.	Dental term	Dentists' translation	The suggested translation
1.	Denture pressure areas.	1. مناطق ضغط في الطقم. 2. ضغط مرتبط بالأسنان. 3. المناطق التي تعمل ضغط.	مناطق ضاغطة من طقم الأسنان.
2.	Implants for construction and replacement of bone loss in the jaws.	1. الزرعات هي لبناء واستبدال. 2. زرعات لتصنيع وتعويض.	استعمال الغرسات لبناء واستبدالها الفقد العظمي في الفكين.
3.	Bone site augmentation procedures in implantology	1. الإجراءات التي تتم في مراكز زراعة العظم. 2. تعويض العظم في علم زراعة الأسنان. 3. عمليات الحفاظ على العظم في علم زراعة الأسنان. 4. زراعة العظم التراكمي.	إجراءات تدعيم المواقع العظمية في عمليات الغرس السني.
4.	Bone and gingival grafting in the anterior bone defects.	1. التعويض في الأنسجة والعظم. 2. زراعة عظم ولثة في المنطقة المتضررة من العظم. 3. النسيج العظمي واللثوي. 4. علم زراعة العظم واللثة.	التطعيم العظمي واللثوي في حالات نقص العظم في المناطق الأمامية
5.	Restoring extremely worn occlusion by full mouth reconstruction.	1. إعادة بناء الفم كامل لإعادة العضة كما كانت. 2. إعادة تركيب الأسنان المتهدمة للفم كامل. 3. إعادة تأهيل الإطباق الذائب من خلال إعادة وبناء الفم بالكامل. 4. .... عن طريق تعويض الفم الكامل. 5. الترميم المبالغ فيه (الزائد) مضر عند طيق الفكين. 6. التعويض الكامل للأسنان باستخدام التعويض الفموي الكامل. 7. تعويض الإطباق عن طريق إعادة بناء الفكين. 8. إعادة بناء الفم بسبب اهتراء الإطباق	ترميم حالات التآكل الإطباق الشديد عن طريق التأهيل الكامل للفم
6.	Full occlusal rehabilitation using fixed restoration	1. إعادة التأهيل باستعمال جهاز ثابت. 2. الترميم الكامل باستخدام التعويضات الثابتة. 3. إعادة التأقلم باستخدام التعويض الثابت. 4. التعويض الكامل للأسنان باستخدام التركيبات الثابتة إعادة تأهيل الفم. 5. إعادة الإطباق الى وضعة الصحيح عن طريق الحشوة الثابتة. 6. استخدام المواد الثابتة في الإطباق.	التأهيل الإطباق الكامل باستخدام الترميمات الثابتة.

7.	Changes in Blood Flow and Fat content in the irradiated Mandible Detected by Means of neat Infrared Spectroscopy.	1. الصورة التفرزيونية. 2. العلاج الكيميائي. 3. جهاز خاص 4. قارئ الأشعة تحت الحمراء. 5. عن طريق قياس الأشعة تحت الحمراء . 6. السبكتروسكوبي. 7. جهاز ال ( spectroscopy )	مطياف الأشعة تحت الحمراء
8.	Diagnosis and early treatment of Mandibular Pragmatism.	1. التشخيص المبكر لتقدم العظم في الفك السفلي. 2. التشخيص والعلاج المبكر لاندفاع الفك. 3. التشخيص في تقدم الفك السفلي.	التشخيص والمعالجة المبكرة لبروز الفك السفلي
9.	Canine reimplementation revised.	1. إعادة زراعة الناب 2. مراجعة إعادة زراعة الناب 3. إعادة زراعة وتليسه الناب 4. إعادة الزيارة لزراعة الناب 5. إعادة تقييم عملية زراعة الناب 6. إعادة زرع للضاحك	تجديد البحث في إعادة زراعة الأنثياب المنظومة.
10.	Use of polylactic acid for guided tissue regeneration	1. استعمال حمض البولي لاكتك لهندسة الجينات والأنسجة. 2. لإعادة توجيه الأنسجة 3. لإعادة تكوين الأنسجة 4. للحفاظ على شكل معين للنسيج 5. استخدام البولاكتك في GTR 6. إعادة زراعة الانسجة بالحامض	استعمال الحمض متعدد البنية في تجديد الأنسجة الموجهة
11.	Oral ulcers when to treat' refer or ignore	متى تعالج او تتجاهل	التقرحات الفموية متى تعالج ومتى تحولها ومتى تتركها دون تدخل
12.	Conservation or surgical approach to periodontal therapy'	1. العملية التحفظية..... 2. التحويل أجل معالجة اللثة بعمل جراحي. 3. التقنين للمحافظة أو الجراحة في علاج اللثة 4. العلاج التحفظي .....	المعالجة المخاطية أو الجراحية في أمراض اللثة
13.	. The need for mucogingival surgery – reevaluated	1. إعادة تقييم جراحة اللثة. 2. إعادة التقييم في الحاجة للجراحة اللثوية الفموية. 3. الحاجة للجراحة اللثوية. 4. الحاجة إلى جراحة اللثة.	الجراحة المخاطية اللثوية، إعادة تقييم
14.	Surgical arch bars (splints) are used inmaxillofacial surgery as an intermaxillary fixation procedures	1. يستخدم الحافظ الجراحي في العمليات الوجه مثل عمليات تثبيت داخل الفك. 2. استخدام المثبتات للفكين في عمليات الجراحة. 3. الجبيرة الجراحية للفك واستخدامها في جراحة الوجه والفك كطرق تثبيت الفكين. 4. وصلات تثبيت الفكين	إجراءات التثبيت بين الفكين.....



15.	It must be known that the ultimate weapon against all bacterial and viral contamination is heat at 160-C for one hour	1.....قاتل للبكتيريا والفيروسات ت الملوثة. 2. أفضل الطرق ضد أي عدوى جرثومية ..... .	يجب العلم أن أقوى الأسلحة ضد أي تلوث فيروسي أو بكتيري هو رفع حرارة النى درجة 160 ولمدة ساعة
16.	Resorbable membrane and Periodontal regeneration : Experimental study On the Beagle dog.	1.كلب البيغل2.دراسة اختباريه على كلب بيغل 3. دراسة تجريبية على لكلاب. 4.الأغشية القابلة للذوبان ..... 5. إعادة إحياء اللثة بعد تجارب على الكلب.	الغشاء القابل للامتصاص وتجديد الأنسجة السنية الدائمة: دراسة تجريبية على كلاب من فصيلة بيغل نوع من كلاب الصيد (
17.	Performance of Some diagnostic systems in examinations for small occlusal carious lesions.	1.فعالية بعض أنظمة التشخيص في فحوصات أفات التسوس الطاحنة. 2. أداء بعض الأدوات التشخيصية في فحص التسوسات السطحية الصغيرة للأسنان. 3. أداء بعض الأنظمة التشخيصية في فحص التسوسات السطحية . 4. تحسين بعض أنظمة التشخيص ....الأسطح الطاحنة	تنفيذ بعض أنظمة التشخيص في فحوصات أفات التسوس الاطباقي
18.	Mucositis	1.التهاب اللثة حوالين الزرعة 2.التهاب الأنسجة	التهاب الأغشية المخاطية
19.	Bruxism	1.اصوات في السنان	صريف الأسنان / الإطباق
20	Aspects of all ceramic anterior restoration.	1. زراعة الاسنان 2. تركيبات سيراميكية 3. العلاج بالسيراميك.	استعادة ، اعادة تاهيل

Through a comprehensive analysis and investigation of the pilot study, some discrepancies have been observed between the dentists' actual translation and the suggested translation depending on both authentic recommended translation sources: UMD and UDD.

Clearly, the effect of the local native language is mostly tangible in the translation of most dentists. For example, the term 'headache' has been translated into "وجع راس" and this is very colloquial Arabic whereas the suggested translation is صداع . Many other examples have been observed in the translations of the undergraduate dentists from the Arab American University.

It has been observed that some translated texts have no clear meaning which means that the dentist has no accurate understanding of the English text. For example, "Bone and Gingival grafting in the Anterior Bone Defects" is translated into:

طعّمات العظم واللثة في حالة فقدان عظم الفك الكلي الأمامي

This means that there is a total loss of the anterior gingival bone and this is inaccurate. The dental text means that there are just defects and suggests the meaning نقص in Arabic here and not تشوهات even though the term carries both meanings but not in this context. These problems are created from the inaccurate contextual understanding. This kind of translation also shows the *conventional* way of translation that depends mostly on one of the lexical meaning of the term only. Through examining

the following dental translation text: "Bone site augmentation procedures in implantology." A serious inaccurate translation has been observed. The text is translated into:

زراعة العظم التراكمي في علم زراعة الأسنان.

It can be easily found out in the translation problem of the mentioned text. The accurate translation is إجراءات تدعيم المواقع العظمية في عمليات الغرس السني. The term "implantology" has been translated into علم زراعة الأسنان whereas it means in this context الغرس السني. This means that the dentists have not succeeded choosing the accurate meaning of the different possible meanings of the term. Technical translation has certain rules that should be followed so as to acquire the real intended accurate meaning. The term "augmentation" has been translated into التراكمي whereas it means تدعيم, and التراكمي in English means "cumulative" even though the lexical meaning for both terms is possible but the textual meaning is different. Technical translation requires more than a surface understanding of the text; it needs a high level of subject knowledge and mastery of the relevant terminology.

There is also a highly confusion in the translation of the dental text "Denture pressure areas" which has been translated into مناطق الضغط الطقم في. This translation is inaccurate because there is difference between "in" which means في in Arabic and "because" which means بسبب so, the correct translation should be مناطق الضغط بسبب الطقم. This slight lexical difference clearly leads to a total change of meaning. The inaccurate translation here resulted from the inaccurate lexical meaning which is regarded as pure *conventional*

inaccuracy. Moreover, the terms “Bone and gingival grafting” is translated into النسيج العظمي واللثوي in Arabic which is not only inaccurate but totally wrong. The accurate meaning is “grafting” التطعيم العظمي واللثوي which means تطعيم and not نسيج. The inaccurate *technical* translation here is observed between the two terms: "grafting" تطعيم and "tissues" أنسجة. Such problems can cause serious misunderstanding. Having knowledge of both the linguistic features as well as the translation rules as a whole must be applied directly to the field of dental translation.

By considering the following dental text, “Restoring extremely worn occlusion by full mouth reconstruction,” we can easily find out the technical translation problematic areas:

- 1- إعادة بناء الفم كامل لإعادة العضة كما كانت.
- 2- إعادة تركيب الأسنان المتهدمة للفم كامل.
- 3- إعادة تأهيل الإطباق الذائب من خلال إعادة وبناء الفم بالكامل.
- 4-.... عن طريق تعويض الفم الكاملز
- 5- الترميم المبالغ فيه (الزائد) مضر عند طبق الفكين.
- 6- التعويض الكامل للأسنان باستخدام التعويض الفموي.

The discrepancies among these translations are very clear and they are largely different in all linguistic features. The accurate translation of the dental text is: ترميم حالات التآكل الإطباقي الشديد عن طريق التأهيل الكامل للفم.

“Restoring extremely worn occlusion” doesn’t mean here: إعادة تركيب الأسنان or الترميم المبالغ فيه. Such problems are resulted from the shallow understanding of the different meanings of the term. Moreover, “full mouth reconstruction” does not here mean إعادة وبناء الفم بالكامل. or تعويض الفم الكامل. The indented meaning is very different. Such technical problematic areas have to be discussed widely in Arab dental colleges where they should include courses in technical translation rules.

Other translated dental texts have shown other technical problematic areas. The translation of the following text: “Full occlusal rehabilitation using fixed restoration” is one example. The accurate translation of this dental text is:

التأهيل الإطباقى الكامل باستخدام الترميمات الثابتة.

Primarily, choosing the exact intended meaning of the dental term is important for medical reasons. “Rehabilitation” does not mean تأقلم or التعويض. Mastering the different connotations of the same term is vital for meaning accuracy and for technical translation satisfaction results. This is true in this term because the meaning of the dental is التأهيل “Full occlusal rehabilitation” means التأهيل الإطباقى الكامل للأسنان and not التعويض الكامل للأسنان. There is a big difference between التأهيل and التعويض in Arabic language. The deep knowledge of the native language is also highly required and important. Each technical term has a certain intended meaning where the translator has to be aware of. The linguistic standards and the technical

translation rules should be mastered and observed and should be the main aim of technical translators in general and the dentists in particular.

In addition to this, the term “fixed restoration” does not mean جهاز ثابت. This causes a kind of ambiguity because the word جهاز in Arabic carries more than one meaning. The word جهاز in English means “device.” Instead, it should be ترميمات ثابتة. The inaccurate translation resulted from the wrong interpretation of the structure of the dental text. Sometimes the wrong translation of simple words leads to a high translation problematic area. As have been mentioned earlier, a large number of dental terms have been translated by a number of dentists without following the exact technical translation rules which has led to inaccurate results. In fact, they haven't followed certain technical strategy of translation when they translated such terms from English into Arabic. This made that big difference and created problematic translation areas. For example, the technical dental term “spectroscopy” has been translated differently into Arabic:

1. الصورة التلفزيونية 2. العلاج الكيميائي 3. جهاز خاص 4. قارئ الأشعة تحت الحمراء

5. عن طريق قياس الأشعة تحت الحمراء 6. السبكتروسكوبي 7. جهاز السبكتروسكوبي

First, spectroscopy, according to UMD means مطياف، منظار but not جهاز خاص or العلاج الكيميائي which is inaccurate. Some dentists usually avoid translating such pure technical terms into Arabic language. Instead, they transliterate them. When they were asked to translate such terms into

Arabic using "Arabicisation" strategy, the result was unsatisfying because of the less application of "Arabicisation" as a translation strategy in both dentists' study and work experience. This is also noted apparently in the translation of the term "polylastic acid" which means according to UMD بولي لاكتيك، الحمض متعدد البنية. It is transliterated by dentists into لاكتيك.

Some of these different translations are inaccurate and others follow different translation strategies which improve how dental terms are usually translated.

There is a kind of mixture in other translated terms between the different possible meanings of the same term. For example, "conservation or surgical approach to periodontal therapy." is translated into التحفظي or التقنين للمحافظة which is inaccurate because the intended meaning here is المعالجة المحافظة. The Arabic word التحفظي is largely different from المحافظة in meaning. Although both Arabic words have the same English equivalent, they are very different in Arabic language. Choosing the exact intended meaning of the term out of different meanings is highly required so as to come up with a real accurate meaning of the dental or technical term.

More other discrepancies have occurred: For example, "mucosistis" according to UMD is التهاب الغشاء المخاطي but it is translated into التهاب الأنسجة which is not only inaccurate but totally wrong. 'Mucosistis' is found in the nose, mouth, lips, eyelids, ears, sexual organs and anus, whereas "fabrics or tissues" الأنسجة are found in four basic tissues in the body: epithelial tissue, muscle tissue, connective or support tissue and nervous tissue. The

translation of ‘mucogingival’ has shown that some translation problems result from the inability to understand some lexical or grammatical rules because this dental term is originally a compound word and overlooked by some dentists. This term originally consisted of two words: ‘mucus’ and ‘gingival,’ so the translation has to be الجراحة المخاطية اللثوية instead of الجراحة اللثوية alone or other inaccurate translation such as: الجراحة اللثوية الفموية

Hajjaj et al. (1990) argued that, the lexical problem in technical translation is the failure to make an accurate distinction between terms that can be used interchangeably in everyday language, but may have a specific sense in a technical text. For example, the term “small occlusal lesions” was translated into:

الأسطح الطاحنة للأسنان ، التسوسات الطاحنة، آفات التسوسات الطاحنة، التسوسات السطحية

When considering the term طاحنة in Arabic, it is very ambiguous since it has more than one meaning in different contexts; the word الطاحنة leads to many inaccurate textual meanings in Arabic. Besides, it is not the real technical translation of the term “occlusal” is الإطباق in Arabic. In that, the technical meaning of the term is آفات التسوس الإطباق. Another inaccurate technical area is found in the translation of the following dental terms: “resorbable membrane and periodontal regeneration: Experimental study on the Beagle dog.” The first problem occurred because of the inaccurate distinction between “Test study” and “Experimental study”. “Experimental study” involves the use of new ideas or methods; whereas “a medical test” is an examination of a part of the body conducted in order to



make sure whether it is healthy or not to find out the cause of an illness. In that, “experimental study” is translated into دراسات اختبارية and not دراسات تجريبية as it should be.

Another inaccurate translation had occurred because of the oversight of the cultural background of the dental term source language. Some dentists or even some translators don't acquire the intended meaning of the term for cultural reasons. For example, the word “Beagle dog” was translated into كلب بيجل and was regarded as a person, but this is totally wrong. “Beagle” refers to a certain kind of dogs where the experimental tests conducted on. This means that the dentist didn't acquire the meaning of the word "Beagle." The translation becomes as if a person named Beagle owned a dog. More translation inaccuracy occurs in the same dental text translation, “periodontal regeneration” which is translated into إعادة إحياء اللثة. This is inaccurate because إعادة إحياء in English means ‘revive’ or ‘resurrect’. The word إحياء in Arabic is inaccurate in this context. Instead, it should be تجديد الأنسجة. Moreover, “resorbable membrane” is translated into الأغشية القابلة للذوبان which is very different from what the source dental text meaning. القابلة للذوبان in Arabic means “dissolvable” or “soluble,” which is very different from الأغشية القابلة للامتصاص as it should be. It is a must then that a dentist has to choose the required pure technical meaning of the term in Arabic language. On the other hand, it is totally wrong to rely on machine translation or English Arabic dictionaries without a comprehensive analysis.

One interpretation that can be remarkably considered for the inaccuracy in dentistry translation is the lack of "Arabization" use as a translation strategy at the universities during studying or in the work place as well. Some dentists have raised this point when they were asked about dental translation conditions. On the other hand, others haven't used English terms in their learning time at all; this can be applied to the graduates from Syria or other Eastern European countries as well. This means that the institutional background of the dentists determines his/her ability and accuracy in English dental terms translation.

Hervey and Higgins (1992) have discussed the causes of some technical translation inaccuracy and has said that this problem is caused by "the failure to understand underlying supposition knowledge taken for granted by experts".

Hajjaj et al. (ibid). have explained that, more conventional translation problematic areas resulted from the confusion of closely similar prefixes or suffixes. It clearly appeared in the following example: "intermaxillary fixation procedures." This term was translated as: إجراءات التثبيت داخل الفك The English text mentions "intermaxillary fixation procedures" which implies that fixation takes place *between* the maxilla and the mandible, whereas the Arabic translated text talks about fixation procedures *within* the maxilla. The translation problem results here from the misuse of "inter" (a prefix which means "between") in the translated term as "intra" (a prefix which means "within"). When the translated text was examined the dental term should be: intramaxillary fixation" rather

than "intermaxillary fixation" as it is in the source text, so the dentists failed to differentiate between "inter" and "intra" which led to this translation problem.

By studying the translations of the term "performance", it is very apparent to find out the inaccurate translation area. "Performance" is translated into فعالية which is inaccurate because فعالية in English means "effectiveness" and not "performance". A skilled translator can easily understand the different meanings of these two terms. Hajjaj et al, (1990: 49) added that, "our knowledge of the world suggests several differences between "performance" on the one hand and "effectiveness" on the other hand, "performance" could differ in kind (be good or bad) but "efficiency/effectiveness," is a matter of degree."

More translation problems are also found in the translation of the following examples: The term "contamination" means تلوث whereas it was translated into عدوى which is not only inaccurate but totally wrong. Disease only occurs when the infection impairs the health of the host which means that not every contamination leads to infection.

Recover K. (n.d). [differentiate between contamination infection and disease]RetrievedonMarch6,2016from:[http://www.answers.com/Q/Differentiate\\_between\\_contamination\\_infection\\_and\\_disease\\_What\\_are\\_the\\_possible\\_outcomes\\_in\\_each](http://www.answers.com/Q/Differentiate_between_contamination_infection_and_disease_What_are_the_possible_outcomes_in_each) "Contamination" implies the presence of microorganisms that do not necessarily colonize or reproduce in the host". Whereas "Infection" implies colonization and reproduction of the organism within the host."

There are many conventional and technical problems that encounter both translators and dentists when translating technical or dental terms into Arabic language. Many of these problematic areas are observed in the research pilot study.

In fact, there is no tangible evidence that there is a regional effect in the dentists' degree of translation accuracy, but the experience and the institutional background have a great role in the translation accuracy. At the same time, there is a remarkable personal effect in the translation accuracy degree. A number of dentists have shown little interest in dental terminology translation in Arabic and left the questionnaire almost empty which has changed the researcher direction toward more interested ones. Those experienced dentists are more willing in dental terminology translation and have also come up with satisfying translation results. Besides, those experienced dentists graduated from the University of Jordan and Alquds University have shown very good interest and results in dental translation. Apparently, a number of the targeted dentists graduated from Eastern Europe, Russia or Ukraine in addition to Syria. They have faced some kind of hindrances and obstacles in dental terminology translation. Finally, the undergraduate dentistry college students from The Arab American university in Jenin have faced a great difficulty in dental terms translation and the result was greatly unsatisfying and a number of dental terms have been left without translation which raised the researcher's eyebrows.

## **Chapter five**

### **Conclusion and Recommendations**

#### **5.1 Conclusion:**

The main central concern of the study is to debate the problematic areas in dental translation from English into Arabic based mainly on the translated dental terms by a number of dentists in certain regions in West Bank which are Nablus and the Arab American University in Jenin. Through a vast investigation of the translated dental terms of the pilot study, the researcher has concluded the following:

The inaccurate translation areas resulted from the lack of experience in technical translation rules as a main required strategy that should be followed in translating dental terms because dental terms translation is mainly considered as a technical translation branch. The study has also focused on the different strategies in technical translation in general and in dental term translation in particular which are: Arabicisation, transliteration and descriptive translation. These different translation equivalences are usually used in technical or dental terms translation to find out the accurate equivalence in the TL. At the same time, using these different translation strategies haphazardly and without following certain translation rules often leads to unsatisfying translations style. The selection of the mentioned equivalences are used according to the type of the dental text and the type of the recipient. Other findings are represented in the vast use of

transliteration between specialists in particular which is the most common strategy on the expense of other strategies because it is the easiest one although it is not the best option in some cases. In fact, using acronyms or abbreviations is very common among dentists, and using transliteration translation strategy for abbreviations or acronyms leads to a high ambiguity. As a result, the original dental term that the abbreviation or the acronym stands for will be forgotten and neglected, then there will be a complete devastation of the original term meaning. Other translation strategies should be used instead. Moreover, the experience and the institutional background of the targeted dentists have shown great influence on the dental terms translation accuracy. At the same time, the study has not revealed an important regional factor of the dentists in the level of translation accuracy. Apparently, the study has shown significant differences between the dentists who receive their education in English language and those who have received their education in other languages.

It has been observed that little interest is given to dental terminology translation in the targeted dental institution since the translation level results are unsatisfying. Little attention is given to an authentic dental translation sources which are recommended by the International Health Organization as a backup dental or medical translation sources such as the UMD and UDD.

Arabicisation is mostly neglected as a translation strategy among dentists especially for those who receive their education in English. Finally,

it is observed that there is smattering of both Arabic and English languages basic writing rules.

## **5.2 Recommendations:**

In the light of the findings of this study, the following recommendations can be made:

1. Arab universities should include dental or medical translation terms training courses about the bases of technical translation rules. Besides, a deep knowledge of both SL and TL rules is highly required.
2. The dentists or even the translators should depend on the dental text as a context bound and not as a context free so as to avoid having strange irrelevant translation. The most inaccurate dental terms translation has resulted from choosing different unlearned term meanings from Arabic dictionaries which made that inaccurate translation.
3. Depending mostly on one dental translation equivalence at the expense of other common equivalences can create serious translation perception results. On the other hand, the selection of the translation strategy should be largely dependent on the term itself and not on the dentist's views. Besides, the use of acronyms or abbreviations should be minimized so as to avoid irrelevant translation.

4. The technical translation equivalences and rules should be unified in the Arab World so as to come up with a clear standard translation rules.
5. The translators or the dentists should be aware of the English culture so as to avoid ambiguous translation from English into Arabic of the English cultural elements because it has been observed that some English dental terms carry English cultural elements.
6. The most authentic reliable dental translation sources that the dentists should exploit or utilize are the Unified Medical Dictionary and The Unified Dictionary of Dentistry which are proved by the International Health Organization.



## References

- Baker, M. (1992). **In Other Words**. London: Routledge.
- Byrne, J. (2006). **Technical translation, Usability Strategies for Translating Technical Documentation**. Netherland: Springer.
- Byrne, J. (2012). **Scientific and Technical Translation Explained**. New York: St. Jerome Publishing.
- Catford, J. C. (1965). **A Linguistic Theory of Translation**. London: Oxford University Press.
- Chabner, D. (2009). **Medical Terminology: A short Course**, (5<sup>th</sup> ed.) U.S.A: Saunders Elsevier.
- Chabner, D. (2010). **Medical Language Instant Translator**. 4th ed. Maryland Heights: Saunders.
- Darwish, A.(2009). **Terminology and Translation: A Phonological-semantic Approach to Arabic Terminology**. Melbourne: Writescope Publishers.
- Dickens, H. Hervey S. & Higgins, I. (2002). **Thinking Arabic Translation**. London: Routledge.
- Druy, v. w. (1984). *Patient information leaflets*. **British Medical Journal**, 288, 427-42.

- Ead, H. (1998). *Arabic (or Islamic) Influence On the Historical Development of Medicine*. Cairo University: Heidelberg, Germany. Retrieved on February 8, 2016 from: <http://www.levity.com/alchemy/islam19.html>
  
- El Shafey, F., A., M. (1985). *Compounding in English and Arabic, Implications for Translation Methodology*. Unpublished M.A Thesis, Cairo University, Cairo. Retrieved on January 14, 2016 from: <http://translationjournal.net/journal/21novice.htm>
  
- Enani, M., (1999). *Graduated Exercises in Translation from Arabic to English*. Cairo: Anglo Egyptian Bookshop. Retrieved on January 16, 2106 from: <http://translationjournal.net/journal/21novice.htm>
  
- Fargal, M., & Shunnaq, A. (1999). *Translation with reference to Arabic and English: A particular Guide*. Jordan: Dar Al-Hillal for Translation.
  
- Fug, P., & Keown, K. (1997). *Machine Translation*. New York: Kluwer academic Publisher. Retrieved on July 3,2015 from: <http://link.springer.com/article/10.1023/A:1007974605290#page-1>
  
- Gambier, Y. & Doorslaer, L. (2011). *Handbook of Translation Studies*, (2<sup>nd</sup>. Volume) Amsterdam/ Philadelphia : John Benjamins Publication Company. Retrieved on December 17,2015 from: <https://benjamins.com/#catalog/books/hts.2/main>

- Glover, B. & Knight, K. (1998). *Translation Names and Technical Terms in Arabic Text*. **Semitic Proceedings of the Workshop on Computational Approaches to Semantic Languages**, pages 34-41. Retrieved on February 6, 2016 from: <http://dl.acm.org/citation.cfm?id=1621760>
  
- Haddad, R. (2008). *Translation of Medical Terminology: An Analytical Study*. Unpublished MA Thesis, Yarmouk University, Irbid. Retrieved on January 4, 2016 from: <http://repository.yu.edu.jo/bitstream/handle/123456789/3376/495174%20%20%20%20.pdf?sequence=1>
  
- Hajjaj A. & al-Jrrah, H. (1996). *Problems in Technical Translation*. Albasaer, 1 (3).
  
- Hatim, B. & Mason, I. (1990). **Discourse and the Translator**. London: Longman.
  
- Hatim, B. & Munday, G. (2004). **Translation: An Advanced Resource Book**. London: Routledge.
  
- Herget, K. & Alegre, T. (2009). *Translation of Medical Terms*. **Translation Journal**, 13 (3). Retrieved on December 7, 2015 from: <http://translationjournal.net/journal/49medical1.htm>
  
- Hervey, S. & Higgins, I. (1992). **Thinking Translation**. London: Routledge.

- Mason, I. (2001). **Communicative/Functional Approaches**. In Baker, M. (ed.), **Routledge Encyclopaedia of Translation Studies** (pp.29-32). London and New York: Routledge.
- Montalt, V. (2007). **Translation Step by Step: Learning by Drafting**. New York: Routledge,
- Nassar, M. (2002). **Loss in Meaning in Translating Medical English Texts into Arabic**. Unpublished MA Thesis, Yarmouk University, Irbid.
- Newmark, P. (1988) **A Textbook of Translation**. London: Prentice Hall International
- Pilegaard, M. (1997). *Translation of Medical Research Articles*. In A. Trosborg (Ed.), **Text Typology and Translation**. Amsterdam: John Benjamin Publishing Company (p. 160) **Retrieved on January 5, 2016 from:** [https://books.google.ps/books?id=5jLOKD3gFyMC&pg=PA160&lpg=PA160&dq=Fishback+\(+1986:+160&source=bl&ots=E9Wx09pSSf&sig=x4BwhVmVVENpDK4or-T5ihL-qFc&hl=ar&sa=X&ved=0ahUKEwiK-Kvymu7LAhXG2CwKHVhEDVUQ6AEIGTAA#v=onepage&q=Fishback%20\(%201986%3A%20160&f=false](https://books.google.ps/books?id=5jLOKD3gFyMC&pg=PA160&lpg=PA160&dq=Fishback+(+1986:+160&source=bl&ots=E9Wx09pSSf&sig=x4BwhVmVVENpDK4or-T5ihL-qFc&hl=ar&sa=X&ved=0ahUKEwiK-Kvymu7LAhXG2CwKHVhEDVUQ6AEIGTAA#v=onepage&q=Fishback%20(%201986%3A%20160&f=false)
- Quah, C. (1999). *Issues in the Translation of English Affixes into Malay*. **Journal des traducteurs/ Meta: Translator's Journal**, 44,604-616.

- Richards, J. & Schmidt, R. (2013). **Longman Dictionary of Language Teaching and Applied Linguistics**. 4th ed. New York: Routledge. Retrieved on February 7, 2016 from: [http://www.academia.edu/3670674/Longman\\_Dictionary\\_of\\_Language\\_Teaching\\_and\\_Applied\\_Linguistics\\_4th\\_Edition](http://www.academia.edu/3670674/Longman_Dictionary_of_Language_Teaching_and_Applied_Linguistics_4th_Edition)
- Seiny, M. (1987). "*Pan-Arab and international corporation in technical terminology*," in the proceedings of the **Ninth Conference for Translating and the computer**, Aslib, London, 169-171 Retrieved on August 1st. 2015 from: [www.mt-archive.info/Aslib-1987-Sieny.pdf](http://www.mt-archive.info/Aslib-1987-Sieny.pdf)
- Shajji, H. (2013) **Terminological Inconsistency in Medical Translation from English into Arabic**. Unpublished MA Thesis, An-Najah University, Nablus.
- Tagliacozzo, R. (1975). **Information Processing and Management**, (vol. 12) U.K: Pergamon Press. Retrieved on July 3, 2015 from: <http://deepblue.lib.umich.edu/bitstream/handle/2027.42/21872/0000278.pdf?sequence=1>
- Towaim, M. (2007). **Grammatical and Lexical Features of Scientific and Technical Language**. Unpublished MA Thesis, Yarmouk University, Irbid.

- Wells, C., Peterson, T., & Hannigan, C. (2008). **Technical Writing: A Resource for Technical Writers at All Levels**. New York: Kaplan Publishing.
- Wilss, W. (1982). **The Science of Translation, Problems and Methods** Tübingen, Germany: Gunter Narr Verlag.

#### **Electronic References:**

- Retrieved on November 20, 2015 from:  
[http://www.jostrans.org/issue01/art\\_aixela.php](http://www.jostrans.org/issue01/art_aixela.php)<sup>1</sup>.
- Retrieved on November 23, 2015 from:  
[http://arbs.nzcer.org.nz/supportmaterials/language\\_of\\_science.php](http://arbs.nzcer.org.nz/supportmaterials/language_of_science.php)
- Retrieved on January 15, 2016 from:  
<http://www.languagerealm.com/articles/history-of-translation.php>
- Retrieved January 20, 2016 from <http://atlasls.com/blog/?p=65>)
- Retrieved on January 23, 2016 from  
<https://quizlet.com/57036959/wound-basic-flash-cards/>
- Retrieved on January 25, from:  
[http://www.answers.com/Q/Differentiate\\_between\\_contamination\\_in\\_infection\\_and\\_disease\\_What\\_are\\_the\\_possible\\_outcomes\\_in\\_each](http://www.answers.com/Q/Differentiate_between_contamination_in_infection_and_disease_What_are_the_possible_outcomes_in_each)
- Retrieved on January 30, from:  
<http://www.ada.org/glossaryforprofessionals.aspx>

- Retrieved on February 2<sup>nd</sup>, 2016  
<http://www.metmeetings.org/en/metm10-poster-dental-terms:432>
- Retrieved on February 5, 2016 from:  
<https://www.youtube.com/watch?v=QvDw6m2kA6Q>
- Retrieved on February 5, 2016 from:  
<http://www.thefreedictionary.com/loan+translation>
- Retrieved on February 6, 2016 from:  
<http://globalvis.com/2014/05/technical-translation-4-rules-of-thumb/>
- Retrieved on February 6, 2016 from:  
[https://en.wikipedia.org/wiki/Technical\\_translation](https://en.wikipedia.org/wiki/Technical_translation)
- Retrieved on February 7, 2016 from:  
<http://www.mtmlinguasoft.com/what-is-technical-translation/>
- Retrieved on February 15, 2016 from:  
<http://applications.emro.who.int/dsaf/dsa563.pdf>
- Retrieved on March 6, 2016 from:  
[http://www.answers.com/Q/Differentiate\\_between\\_contamination\\_infection\\_and\\_disease\\_What\\_are\\_the\\_possible\\_outcomes\\_in\\_each](http://www.answers.com/Q/Differentiate_between_contamination_infection_and_disease_What_are_the_possible_outcomes_in_each)
- Retrieved on February 7, 2016 from:  
[http://www.academia.edu/3670674/Longman\\_Dictionary\\_of\\_Language\\_Teaching\\_and\\_Applied\\_Linguistics\\_4th\\_Edition](http://www.academia.edu/3670674/Longman_Dictionary_of_Language_Teaching_and_Applied_Linguistics_4th_Edition)

جامعة النجاح الوطنية  
كلية الدراسات العليا

## عدم الدقة في ترجمة مصطلحات طب الأسنان من الإنجليزية إلى العربية

إعداد

محمد فواز محمود خموس

إشراف

الدكتور أيمن نزال

قدمت هذه الأطروحة استكمالاً لمتطلبات درجة الماجستير في اللغويات التطبيقية  
والترجمة، كلية الدراسات العليا، جامعة النجاح الوطنية، نابلس، فلسطين.

2016



ب

## عدم الدقة في ترجمة مصطلحات طب الأسنان من الإنجليزية إلى العربية

إعداد

محمد فواز محمود خموس

إشراف

الدكتور أيمن نزال

### الملخص

تبحث هذه الدراسة في مشكلة عدم الدقة في ترجمة مصطلحات طب الأسنان من الإنجليزية إلى العربية، حيث ناقشت الدراسة مجالات عدم الدقة التقنية التي رصدت في الدراسة التجريبية.

في الحقيقة تعد ترجمة مصطلحات طب الأسنان أحد فروع الترجمة التقنية والتي بدورها حدثت بالباحث إلى تحليل وتعريف الإستراتيجيات المختلفة المتبعة في الترجمة التقنية بشكل عام والتي تستعمل أيضا كاستراتيجيات في ترجمة مصطلحات طب الأسنان كذلك.

وناقش الباحث بعض الاتجاهات ووجهات النظر التي بحثها المختصون في هذا المجال، كما تهدف الدراسة إلى التعرف على أسباب عدم الدقة في ترجمة مصطلحات طب الأسنان وإيجاد الحلول المناسبة المرضية للمشكلة.

تعتبر نتائج الدراسة مصدرا موثقا ومساعدًا لأطباء الأسنان والتي يمكن الإعتماد عليها للتغلب على المشاكل المشار إليها.

بالإضافة إلى ذلك ناقشت الدراسة سلبيات استخدام استراتيجيات ترجمة المصطلحات التقنية لنفس المصطلح في وقت واحد والذي بلا أدنى شك سيؤدي إلى غموض وارتباك خطير في طبيعة الترجمة.

يعتبر استعمال الدراسة التجريبية الأسلوب الرئيس في جمع المعلومات بالإضافة الى إجراء عدة لقاءات مع عدد من أطباء الأسنان والتي بدورها وفرت معرفة عميقة وواضحة حول طبيعة ترجمة مصطلحات طب الأسنان الحالية.

## ج

شملت الدراسة مدينة نابلس والجامعة العربية الأمريكية في جنين بحيث اشتملت على مائة طبيب أسنان من مدينة نابلس والجامعة العربية الأمريكية في جنين، والتي تم دراستها وتحليلها والتحقق منها.

كما لم يكن لعامل الجغرافيا المكانية - كما تظهر الدراسة - أهمية واضحة حول مدى الدقة في الترجمة، إلا أنه ظهرت أهمية واضحة لمدى الخبرة للطبيب، وكذلك نوعية المؤسسة التي تخرج منها كعامل أساسي في مدى الدقة في ترجمة مصطلحات طب الأسنان.

وضحت الدراسة الفرق بين الترجمة التقنية والترجمة التقليدية وأظهرت أن هناك غياب كبير واضح لقوانين الترجمة التقنية من خلال الدراسة التجريبية، وناقشت الدراسة أيضا الاستراتيجيات المتبعة في الترجمة التقنية، وهي المكافئ المعرّب والمكافئ الاستعاري والمكافئ الوصفي، كما أظهرت أن المكافئ المعرّب نادر الاستخدام في حين أن المكافئ الوصفي يستعمل بين غير المختصين والمكافئ الاستعاري الأكثر استخداما بين المختصين.

وخلصت الدراسة إلى أن أكثر المصادر الموثقة في ترجمة مصطلحات طب الأسنان هي معجم طب الأسنان الموحد 2004، والمعجم الطبي الموحد 2009 واللذان اعتمدتهما منظمة الصحة العالمية.