

Difficulties that Yemeni Students of English Encounter in Translating Scientific Texts from English into Arabic

الصعوبات التي يواجهها طلاب اللغة الإنجليزية اليمنيون
عند ترجمة النصوص العلمية من الإنجليزية إلى العربية

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Abstract:

The aim of this study is to investigate the difficulties confronted by Yemeni students in translating scientific texts from English into Arabic. The result showed that the majority of students found it hard to get the equivalent of the scientific terms that were used in the test. It revealed that a great number of students used a method of neologisms intend at using pure Arabic vocabularies, while others preferred another methods which did not serve the Arabic language such as transcription; so they ended up with incorrect translation. The analysis also emphasized that students' mistakes were due to their lack of knowledge of appropriate methods they to be used to translate scientific texts and to their unfamiliarity with various scientific terms.

Keywords: Translation, Technical Translation, Scientific Texts, Arabization, Neologisms, Thamar University, Yemen.

ملخص:

تهدف هذه الدراسة إلى معرفة الصعوبات التي يواجهها الطلاب اليمنيون عند ترجمة النصوص العلمية من اللغة الإنجليزية إلى اللغة العربية. وقد أظهرت النتائج أن غالبية الطلبة قد وجدوا صعوبة في الحصول على مكافئ للمصطلحات العلمية التي استخدمت في الاختبار كما أن عددا كبيرا منهم استخدموا طريقة "المستجدات" بقصد استخدام مفردات عربية محضة. بينما فضل آخرون طرقاً أخرى لا تخدم اللغة العربية مثل "النسخ الصوتي"، لذلك انتهى بهم الأمر بترجمة غير صحيحة. كما أكد التحليل أيضاً أن أخطاء الطلبة ترجع إلى افتقارهم إلى المعرفة بالطرق المناسبة لاستخدامها في ترجمة النصوص العلمية وعدم إلمامهم أيضاً بمختلف المصطلحات العلمية. **الكلمات المفتاحية:** الترجمة، الترجمة التقنية، النصوص العلمية، التعريب، المستجدات، جامعة ذمار، اليمن.

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1. Introduction

Translation is a human activity that enable us to communicate. It plays a significant role in translating thoughts, information and knowledge. It is important for science and technology development. Catford(1965: vii) states that “ translation is an activity of enormous importance in the modern world and it is a subject of interest not only to linguists, professionals, amateur translators and language teachers, but also to electric engineers and mathematicians”. Scientific translation covers the translation of many kinds of specialized texts in science, technology, medicine, and economics. It is not like other translation, it goes beyond just rendering words from one language into another. Due to technological developments, a lot of difficulties have appeared in translating technical texts and expressions from English into Arabic. One of the main problems that English students face is how to deal with translating scientific terms from English into Arabic and in choosing the best method to achieve a high quality translation of those terms which may develop the Arabic language.

Significance of the Study

This current study may be of great value to those who are interested in the field of translation in general and to English students in particular, since it provides broad analysis to the areas of difficulties in translating scientific texts from English into Arabic and therefore recommended the solutions. In addition, this attempt may be of great value in helping teachers to find out the appropriate method, techniques and activities for teaching translation in general and technical translation in particular to develop their students' competence and performance in translation.

The Objectives and Questions of the Study

This study aims at investigating the difficulties that Yemeni students majoring in English language at English Department, Faculty of Arts, Tamar University in translating scientific texts from English into Arabic. It also attempts to clarify the elements that cause these difficulties and gives some recommendations on how to overcome them. In order to achieve these goals, the study will answer the following questions; What are the difficulties faced by Yemeni students when translating scientific texts from English into Arabic? What kind of methods students use in translating scientific terms?

Limitations of the Study

Fourth year English language students at English Department, Faculty of Arts, Tamar University, will be the chosen population sample to perform this study. 56 students will be chosen randomly from the total population of students enrolled in the second semester of the academic year 2020/2021. It dealt with some scientific terms that undergraduate students of English face in translation from English into Arabic.

2. Definition of Terms

2.1 Translation

Translation is a communicative activity that involves the transfer of information from the source language to the target language. A definition which emphasis on the transfer of meaning and style was given by Nida and Taber (1969 :12)

“Translating consists in reproducing in the receptor language the closest natural equivalent of the source-language message, first in terms of meaning and secondly in terms of style” Ghazala(2008:1) used the term translation to refer to " all processes and methods used to render and/or transfer the meaning of the source language into the target language". By meaning he means the components of language i.e. grammar(syntax), phonology(sounds), style and vocabulary(words). According to Catford(1995:20) translation is "the replacement of textual material in one language(SL) by equivalent textual material in another language(TL)". He builds his definition on the concept of equivalence, describing translation as the replacement of textual material in one language by equivalent textual material in another language.

2.2 Technical Translation

Ghazala(2008:156) defined technical translation as "the translation of scientific terms of all kinds: medical, physical, chemical, mathematic, mechanical, technological, biological, agricultural, computer, internet and other terms of the various branches of science." Technical translation is primarily distinguished from other forms of translation by terminology. Newmark (1988: 151) defined technical translation as “one part of specialized translation; institutional translation, the area of politics, commerce, finance, government etc, is the other. I take technical translation as potentially (but far from actually) non-cultural, therefore 'universal'; the benefits of technology are not confined to one speech community”.

2.3 Arabization

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Ghazala (2008: 156) uses the term “Arabization” or “Arabicization” as a synonym for technical translation, “Arabization (or Arabicization, by analogy to Anglicization, Germanization, etc.) is the translation of technical terms into Arabic”. However, Baker (1987: 187) notes that: "Arabization involves the rendering of foreign terms into Arabic in its original linguistic form, after introducing minor phonetic and/or morphological changes where necessary. Arabicization is looked upon as an adopted method for introducing new terms into Arabic, i.e. it is the process of translating foreign terms using Arabic forms. For instance: Philosophy *فلسفة* , Asphalt *أسفلت*.

2.4 Scientific Texts

According to El Mustapha L. and Wafa A. (2014 : 89) “The term ‘science’ covers a wide range of disciplines that could include, but are not limited to, physics, biology, chemistry, astronomy, mathematics, geology, biochemistry, astrophysics, ecology and engineering sciences.” Pinchuk 1977: 167) stated that “Scientific texts differ from other texts basically because ‘scientific language draws on humanistic education, while workshop terms are non-literary, practical, colloquial and sometimes humorous”(cited in El Mustapha L. and Wafa A.(2014:89).

3. Strategies of Translating English Scientific Terms into Arabic

Translating scientific terms requires specific skills in the form of some strategies that are likely to be successful and supply the target language. In this respect, several options are available for translators to translate scientific terms to Arabic. What a translator of scientific texts needs is to choose the most appropriate strategy that facilitates the exact transfer of the message from the source language to the target language. According to Ghazala(2008: 163) there are several methods of translating scientific terms into Arabic. These methods will be discussed and ordered from poorest to the best as follow:

3.1 Transcription(رسم لفظي/ نسخ لفظي)

Transcription is one of the strategies that used to translate scientific terms. It is the literal spelling of the English term in Arabic letters as it is exactly pronounced, e.g. Bank(بنك) , Radar(رادار) , Aspirin(أسبرين) , Microphone(ميكروفون) , Bacteria(بكتيريا)

This method does not give the meaning of the word in Arabic and also the terms are not pure Arabic ones. They are just borrowed and shaped in Arabic letters. According to Ghazala (2008: 168) "Transcription is the poorest and worst way of Arabization if taken to be applied to all terms, for it means to leave the door wide

open for the foreign terminology to invade Arabic language unconditionally and seriously". Therefore, it should be avoided by the students except in the case where translators could not find equivalent for the term in Arabic language, e.g. فيتامين. In such a case, it can be used temporarily until a recognized Arabic term is suggested.

3.2 Naturalization (التطبيع)

According to Ghazala (2008:159), naturalization is the attempt to adopt the English term to Arabic pronunciation, alphabet and grammar, by modifying its pronunciation only partly, changing the spelling of one or more of its letters into close Arabic ones, and using it in a singular, plural, masculine, feminine or verb form. e.g.

Technology تكنولوجيا

- Technological(adj.) تكنولوجيا
- Technologist(n) (متخصص في التكنولوجيا) / تكنولوجيا متخصصة
- Technologists(n./plural) تكنولوجيايون / تكنولوجيايات
- Technologies (n./plural) تكنولوجيايات
- Technologically(adv.) تكنولوجياياً

Naturalization can be seen as evolution of the transcription method, although it is still not convenient. Thus it is not pure Arabic vocabularies, the basic or the roots of terms remain English even if they are naturalized. To avoid this type of problem, Ghazala(2008) supported another method that would fulfill the appropriate translation of scientific terms.

3.3 Coinage (النقش / السك)

According to Ghazala(2008:162-166) coinage is the best method of Arabization. It is the introduction of new terms in the Arabic language via three main processes:

3.3.1 Revival

Revival is called (الإحياء أو التوليد) in Arabic. It attempts to used of an old word with new meaning. According to Baker(1987) this method uses Arabic lexicon instead of trying to introduce new concepts that may take time to be adopted, e. g.

1-Train(قطار) initially used to mean a line of camels.

2-Car (سيارة) initially used to mean long distance desert travelers.

3-Newspaper (جريدة) initially used to mean a small palm stick was used to write on patches.

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According to Ghazala(2008: 163) "Revival is a successful, but difficult way of Arabization. The Arabized terms are purely Arabic. It was a reaction to the invasion of Arabic by foreign words."

3.3.2 Derivation

Derivation or what is called (الاشتقاق) in Arabic, is a process by which a group of words that have a similar meaning are derived from one basic morpheme: the root (الجذر). It based on measurement (القياس). The most famous measures in Arabic are "instrument names" (أسماء الآلة) such as:

1- مفعّل

- Laboratory مخبر
- Factory مصنع

2- مفعلة

- Butchery ملحمة/ مجزرة
- Grease box مشحمة

3- فعالة / مفعالة

- Fridge ثلاجة
- Mixer خلاطة

4- مفعّل

- Drill مثقاب
- Iron مكواة

According to Baker(1987:186) this method provides a powerful tool for coining new terms in Arabic, it is favored by the academies as the most natural way of enriching the language without altering its identity. On the other hand, Ghazala (2008) argued that derivation is still a limited way because it cannot be applied to all the terms because some of them would not accept measures.

3.3.3 Neologisms(المستجدات)

According to Ghazala(2008:165) neologisms are words, ideas and expressions which were not known in classical Arabic. The door of Arabic language is always open to receive newly Arabized terms in order to match the fast development of technological, computer and internet sciences, e.g.

- Psychology علم النفس
- Physiology علم وظائف الأعضاء
- Keyboard لوحة مفاتيح الحاسب

Translators who work in scientific terms are always coming across difficult words to translate. They should consider the linguistic differences between English and Arabic, for that they need to coin terms that are linguistically suitable to Arabic.

4. Requirements of Scientific Translator

Scientific translators are not like other ordinary translators. There are certain qualifications that they should have in order to achieve a good translation of scientific texts as well as to convey the exact information. Al-Hasnawi (2010) differentiate six characteristics -taken from the London Institute of Linguistics- that the scientific translator should have:

1. Broad knowledge of the subject-matter of the text to be translated.
2. A well-developed imagination that enables the translator to visualize the equipment or process being described.
3. Intelligence, to be able to fill in the missing links in the original text.
4. A sense of discrimination, to be able to choose the most suitable equivalent term from the literature of the field or from dictionaries.
5. The ability to use one's own language with clarity, conciseness and precision.
6. Practical experience in translating from related fields.

5. Review of Related Literature

For decades, a number of studies in the field of technical translation tried to explore methods of translating technical and scientific terminology into Arabic. **Ahmed Adel Nouri** (2011) conducted a study that shed light on English – Arabic scientific translation. The aim of the study is to investigate errors made by Iraqi students at the University level in translating a scientific text from English into Arabic. According to statistical analysis, the students made errors and faced some difficulties in translating the text because many of them depended on using dictionaries for general purposes instead of using specialized scientific dictionaries.

Manar Fahmi Abu Elayyan (2019) achieved a study that aimed at investigating the problems that Jordanian translators encounter in translating technical texts and expressions from English into Arabic. It also aimed to highlight difficulties that translators face in translating technical texts and expressions in the fields of medicine, business, agriculture, industry and law. The study revealed that some of

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the difficulties that the participants faced were related to language difficulties such as : lexical choice, syntax, and semantics. It also found that the participants resorted to literal translation because of lack of experience, lack of knowledge, absence of enough practice, and shortage of specialized bilingual dictionaries.

Farhan Maqabli and Mohammad Al-Shehab(2017) conducted a study that aimed to examine the ability of translation students in translating technical text from English into Arabic at Jadara University in Jordan. The students were asked to translate the English text into Arabic. The results showed that the ability of students in translating technical and military text displayed fairly low level. Also, it showed no statistical differences between males and females in translating such text. Based on the results of this study, the researcher provided several recommendations. The most important is the need to increase the number of translation courses in the English department at Jadara University.

6. Method and Procedures

6.1. Instrument of the Study

In this study, the researcher used a translation test which was carried out to meet the objectives of the present study. The test contained 9 sentences which covered various scientific terms to be translated from English into Arabic to investigate the difficulties confronted by Yemeni students in the field of scientific translation. The researcher has followed a description and analytical approach.

6.2. Discussion and Analysis

Students deal with scientific terms indifferent ways. They selected different strategies to translate them. Twenty scientific terms were found in the test and discussion is provided below.

1- “ *The first bicycle with **pedal pull** was produced in German.*” The sentence contains one term. This term has been analyzed in the students translations as the table illustrate.

First sentence: The term: **Pedal Pull**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used

Pedal Pull	دواسة سحب-1	42	75%	Neologisms
	دعسة -2	1	2%	
	شد-3	3	5%	
	-No equivalent	2	4%	
	- No translation	8	14%	
Total		56	100%	

Table 1: Translation of the Term **Pedal Pull**

From the above table, it seems that most of the students have no problem in translating the term “pedal pull” using only Arabic vocabulary. As it is shown in the above table, there are three suggested translations. The first one (دواسة سحب) occurred 42 times with 75% of the total percentage, succeeded to convey the required meaning of the English term because it is a complete translation of the term. The second (دعسة) occurred 1 time, with a percentage of 2% and the third (شد) occurred 3 times with a percentage of 5%. The second and the third suggestions are not suitable to be accepted as a translation, the students translated only one item and neglected the other, however, 4% of students gave no equivalent for the term. They translated it into such words like (عجلة، تعاشق). On the other hand, 8 students didn't translate it at all.

2- “The very first **gramophone** was constructed in 1887 by the German inventor Emile Berliner. The sound was recorded to a plane rotating **disc** of zinc covered with wax.”

All of the students translated the second sentence except two of them. This sentence contains two scientific terms “gramophone” and “disc” These terms have been analyzed in the students translations as the tables illustrate.

Second sentence: Term one: **Gramophone**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Gramophone	1-	12	21%	Neologisms Transcription
	الحاكي (فونوغراف)	18	32%	
	حاكي-2	12	21%	

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	فونوغراف-3	7	13%	
	جراموفون-4	2	4%	
	جهاز تسجيل-5	2	4%	
	-No equivalents	3	5%	
	- No translation			
Total		56	100%	

Table 2: Translation of the Term **Gramophone**

As it is shown in the above table, all the students translated the term “Gramophone” using different methods except two of them. The analysis reveals five suggestions. The first one((الحاكي(فونوغراف)) occurred 12 times with 21% of the total percentage, the second(حاكي) occurred 18 times with a percentage of 32% , the third one(فونوغراف) occurred 12 times with a percentage of 21%, the fourth one (جراموفون) occurred 7 times with a percentage of 11%, and the fifth suggestion (جهاز تسجيل) occurred 2 times with a percentage of 4% whereas, no equivalents occurred 2 times with a percentage of 4%. The first, second, third and fifth suggestions appear that the students used the method of neologisms in order to render the term into Arabic ;therefore, they succeeded to use pure Arabic terms, whereas the fourth one appears that students used the transcription method. It is considered as unsuitable translation because it still has the source language pronunciation and it does not show any meaning in Arabic. On the other hand, no equivalents occurred 2 times with a percentage of 4%. They used random translations as (الهاتف الخليوي/ مسماع) and two students didn't translate it at all.

Second sentence: Term two: **Disc**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Disc	قرص-1	40	71%	Neologisms Transcription
	دسك-2	3	5%	
	-No equivalent	8	14%	
	-No translation	5	9%	
Total		56	100%	

Table 3: Translation of the Term **Disc**

As it is shown in the above table, the term was translated by 43 students from the total number. 40 students translated it into (قرص), where they used the method of neologism i.e., using pure Arabic vocabulary and 3 students translated it into (دسك), they used the transcription method. It is considered as inappropriate translation because it still has the source language pronunciation and it does not indicate any meaning in Arabic. 14% of students gave no equivalent for the term. They translated it into such words like (شريط، سيدي، مشغل اسطوانات). These wrong translations due to lack of information related to technical terminology. On the other hand, 5 students didn't translate it at all.

3- “**Electromagnetic** waves are used to carry the sounds which we hear on the radio.” This sentence contains one scientific term. The term was translated using different methods: neologisms and transcription. The analysis revealed two suggested translations as it is shown in the below table.

Third sentence: The term: **Electromagnetic**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Electromagnetic	1- الكهرومغناطيسية	42	75%	Neologisms Naturalization
	2- الالكترومغناطيسية	11	20%	
	-No equivalent	3	5%	
Total		56	100%	

Table 4: Translation of the Term **Electromagnetic**

As it is shown in the above table, the term was translated by 53 students from the total number. They provide two suggestions and used two methods; neologisms and naturalization. The first suggestion has a ratio of 75% , and the second 20%. Only the first suggestion could be accepted as a closest equivalent; it has the source term meaning rendered into the target one. Whereas, the second one is a

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naturalization of the English term; it does not convey the meaning of the term and it is not pure Arabic vocabularies, the basic or the roots of terms remain English even if they are naturalized. On the other hand, no equivalents occurred 3 times with a percentage of 5%. They used random translations as (الذبذبة / فوق الصوتية / حركة موجبة)

4- “*An acid is neutralized by an alkali to form a salt.*” This sentence contains one scientific term. The term was translated using different methods: neologisms and transcription. The analysis revealed two suggested translations as it is shown in the below table.

Fourth sentence: The term: **An acid**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
An acid	1- حمض	52	93%	Neologisms Transcription
	2- أسيد	3	5%	
	-No translation	1	2%	
Total		56	100%	

Table 5: Translation of the Term **An acid**

The table above shows that 52 students managed to provide equivalents for the term "an acid". They provided two suggested translations using two different methods; neologism and transcription. The first suggestion(الحمض) has the highest ratio of occurrence with a percentage of 93%, applying the method of neologisms. It is successful as it uses a pure Arabic term and which is the closest equivalent for " an acid". The second one (أسيد), occurred with a ratio of 5%, which is a mere transcription of the term; it does not carry any sense in Arabic at all. On the other hand, one student didn't translate it at all.

5- “*Most **petroleum** is a **fossil** fuel, formed from the action of intense pressure and heat on buried dead **zooplankton** and **algae**.*” The sentence contains three scientific terms. The table below shows the students concerning translating these terms.

Fifth sentence: Term one: **Petroleum**

The English Term	Suggested Translation	Frequency of	Percentage%	The Method Used
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		Occurrences		
Petroleum	البتروولية-1	54	96%	Naturalization
	-No equivalent	2	4%	
Total		56	100%	

Table 6: Translation of the Term **Petroleum**

It is evident that two students ,with 4% of the total percentage, failed to give an equivalent for the English term “petroleum”, while the rest with average of 96% attempted to translate it using naturalization method. The term has a pure Arabic word (النفط), but instead of using it the students used (البتروولية) as it is common used among Arab countries.

Fifth sentence: Term two: **Fossil**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Fossil	احفوري-1	27	48%	Neologisms
	حجري /-2	23	41%	
	صخري	6	11%	
	-No translation			
Total		56	100%	

Table 7: Translation of the Term **Fossil**

The above table shows that the term “fossil” was translated by 50 students who provided two different translations using the same method, “neologism”. The term was translated using pure Arabic words. 48% of the total students translated the term as “احفوري”, however, 41% translate it as “حجري / صخري”. They are pure Arabic words and convey meaning of the English term. The rest of the students with a percentage of 11% did not translate it at all.

Fifth sentence: Term three: **Zooplankton**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used

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Zooplankton	بلانكتونية-1	45	80%	Naturalization
	-No equivalent	11	20%	
Total		56	100%	

Table 8: Translation of the Term **Zooplankton**

As it is shown in the above table, the term was translated by 45 students from the total number with a percentage of 80%. The analysis reveals that they translated it according to naturalization method using only one word "بلانكتونية" which is accepted translation. According to Almaany Dictionary, the term has an Arabic equivalent which is (العوالق الحيوانية/ الحيوانات البلانكتونية). The rest of the students with a percentage of 20% gave no equivalent for the term "zooplankton" and gave such words as (مدفون/ هالك / قبور الموتى), they do not carry any sense in Arabic at all.

6- "In *electronic* conversation programs, the students are each sitting in the front of a *computer* screen and *log on*." This sentence contains three terms. These terms have been analyzed in the students translations as the tables illustrate.

Sixth sentence: Term one: **Electronic**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Electronic	الالكترونية-1	53	95%	Naturalization
	-No translation	3	5%	
Total		56	100%	

Table 9: Translation of the Term **Electronic**

As it is shown in the above table, the term "electronic" had the highest rate of students, with a percentage of 95% using naturalization method (الالكترونية), it was rewritten in Arabic alphabet. Therefore, it yields one suggestion only. This may be due to the fact that it does not yet have an equivalent in Arabic vocabulary. The rest of the students with a percentage of 5 % did not translate it at all.

Sixth sentence: Term two: **Computer**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Computer	الحاسوب-1	11	20%	Neologisms Transcription
	الكمبيوتر-2	45	80%	
Total		56	100%	

Table 10: Translation of the Term **Computer**

As it is shown in the above table, the term was translated by all students. They provide two suggestions and used two methods; neologisms and naturalization. The first suggestion has a ratio of 20% , and the second 80%. The first suggestion (الحاسوب) is accepted equivalent for the English term, this translation is in pure Arabic language and it conveys the required meaning. On the other hand, the second suggestion(الكمبيوتر) is not accepted as an adequate equivalent, first it is transcribed i.e. it is not in pure Arabic words, also it does not carry the meaning of the source term.

Sixth sentence: Term three: **Log on**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Log on	يسجل الدخول -1	18	32%	Neologism
	يتصل -2	24	43%	
	-No translation	14	25%	
Total		56	100%	

Table 11: Translation of the Term **Log on**

As it is shown in the above table, the term “Log on” was translated by 42 students from the total number who provided two different translations using the same method “neologism”. It was translated using pure Arabic words. The results of the analysis revealed two suggestions for the term. The first one (يسجل الدخول) occurred 18 times with 32% of the total percentage, the second(يتصل) occurred 24 times with a percentage of 43%. Both suggestions are accepted as successful

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rendering since they are the exact equivalent. The rest of the students with a percentage of 25% did not translate it at all.

7- “Click the outlook express icon on the window desktop or in the quick launch toolbar .”

This sentence contains five computer terms; “click”, “outlook”, “window“, “desktop” and “toolbar”. These terms have been analyzed in the students’ translations as the tables illustrate.

Seven sentence: Term one: **Click**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Click	1- اضغط	9	16%	Neologisms
	2- انقر	34	61%	
	-No equivalent	10	18%	
	-No translation	3	5%	
Total		56	100%	

Table 12: Translation of the Term **Click**

The above table shows that the term ‘Click’ was translated by 43 students who provided two different translations using the same method “neologism”. The term was translated using only pure Arabic words. 16% of the total students translated the term as (اضغط), however, 61% translate it as (انقر). 18% of students made no equivalent for the term "Click" and gave such words as (طقطقة), it does not carry any sense in Arabic at all. The term (اضغط) carries the meaning of "press" in English; it is to push something firmly using fingers, whereas (انقر) is just to press something very briefly. Therefore, the second suggestion seems to be the nearest equivalent to the term "click". The rest of the students with a percentage of 5% did not translate it at all.

Seven sentence: Term two : **Outlook Express**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used

Outlook Express	1-outlook express	3	5.3%	Transcription Neologisms
	2-التوقعات السريعة-	15	27%	
	3-الإطلاق السريع-	3	5.3%	
	4-السريع	13	23.2%	
	- No equivalent	13	23.2%	
	-No translation	9	16%	
Total		56	100%	

Table 13: Translation of the Term **Outlook Express**

As it is shown in the above table, 34 students attempted to translate the term "Outlook Express". They provided different suggestions for the term. The students used two methods; transcription and neologisms. The first suggestion "Outlook Express", with a ratio of 5.3%, is not suitable to be accepted as a translation as they kept the term in English as it is. The second, third and fourth suggestions are (السريع), (الإطلاق السريع), (التوقعات السريعة), respectively. They tried to provide pure Arabic translations for the term. However, their suggestions were not successful because they do not carry the meaning of the English expression. These are pure mistranslations of the term because the students understood the term as expressing an idea. The term "Outlook Express" is used for free online mail; it is primarily a name of a company that offers a free emailing via the net. Therefore, it cannot be given an equivalent in Arabic language. 23.2% of students gave no equivalent for the term. They translated it into such words like (وجهة نظر واضحة، تعبير البرنامج، الإرسال المرتقب) The rest of the students with a percentage of 16% did not translate it at all.

Seven sentence: Term three : **Windows**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Windows	ويندوز-1	17	30%	Neologisms Transcription
	النافذة-2	22	39%	
	3-windows	2	4%	
	-No translation	15	27%	

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Total		56	100%	
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Table 14: Translation of the Term **Windows**

The above table shows that the term "windows" was translated by 41 students who provided two different translations methods; neologisms and transcription. They offered three suggested translations (النافذة), (ويندوز) and (windows). The former is successful as it uses a pure Arabic term and which is the closest equivalent for "windows", Whereas the later are a mere transcription of the term. Fifteen students made no translation attempt for the term "Windows" and two kept the terms in English as it is.

Seven sentence: Term four :**Desktop**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Desktop	سطح المكتب-1	27	48%	Neologisms
	-No equivalent	14	25%	
	-No translation	15	27%	
Total		56	100%	

Table 15: Translation of the Term **Desktop**

As it is shown in the above table, the term "Desktop" was translated by 27 students who provided one suggested translation using the same method; neologisms. The term was translated using only pure Arabic words. 48% of the total students translated the term as (سطح المكتب), however, 25% of students gave no equivalent for the term. They translated it into such words like (اللوح المكتبي ، (مكتب القراءة). These translations are not very successful translations , since they do not carry the meaning of the English expression. The term "desktop" is specific to computing lexicography. It is the view in computer screen which is intended to represent the top of a desk which contains certain icons. The rest of the students with a percentage of 27% did not translate it at all.

Seven sentence: Term five : **Toolbar**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used

Toolbar	1- شريط الأدوات	39	70%	Neologisms
	2- شريط	7	12.5%	
	-No equivalent	3	5%	
	-No translation	7	12.5%	
Total		56	100%	

Table 16: Translation of the Term **Toolbar**

The table above shows that 46 students managed to provide equivalents for the term. They provided two suggested translations using the same method "neologism". The term was translated using pure Arabic words. 39 students rendered the term "toolbar" into (شريط الأدوات) while 7 students translated it as (شريط). The first suggestion is a successful one, it is the nearest equivalent to the English term; it carries the meaning and it is a pure Arabic vocabulary. Toolbar is a window that contains a range of icons that access tools; so 39 students from the total numbers succeeded to provide an equivalent for the term. However, 5% of students gave no equivalent for the term. They translated it into such words like (شريط الرسم / أدوات الشريط). The rest of the students with a percentage of 12.5 % did not translate it at all.

8- "The Englishman Sir Alexander Fleming discovered the **antibiotic** properties of **penicillin**." This sentence contains two terms; "antibiotic" and "penicillin". The terms were translated using one method neologisms. The analysis reveals different suggested translations as the tables show.

Eight sentence: Term one : **Antibiotic**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Antibiotic	1- مضاد حيوي	43	77%	Neologisms
	2- مضاد للجراثيم	4	7%	
	3- مضاد للبكتيريا	1	2%	
	4- مضاد	5	9%	
	-No translation	3	5%	

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Total		56	100%	
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Table 17: Translation of the Term **Antibiotic**

The table above shows that 48 students managed to provide equivalents for the term. They provided four suggested translations using the same method "neologism". The term was translated using only pure Arabic words. Students rendered the term "antibiotic" into (مضاد حيوي/ مضاد للجراثيم/ مضاد للبكتيريا) The students are successful and carry the meaning of the English expression, however, 9% of students translated it into (مضاد), which is the translation of first part of the term "Anti-" and they neglect the translation of second part "biotic" which means (حيوي). The rest of the students with a percentage of 5 % did not translate it at all.

Eight sentence: Term two : **Penicillin**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Penicillin	1- البنسلين	49	88%	Transcription Neologisms
	2- عقار	1	2%	
	-No equivalent	3	5%	
	-No translation	3	5%	
Total		56	100%	

Table 18: Translation of the Term **Penicillin**

It is evident that 3 students failed to give an equivalent for the English term. They used such words as (الأنسولين/ بنسلیم) While 50 students attempted to translate it using two methods; transcription and neologisms. They provided two suggestions, the first one (البنسلين) has the highest ratio of occurrence with a percentage of 88%, the second (عقار) with a ratio of 2%. The two suggestions could be accepted as equivalent for the English term. The rest of the students with a percentage of 5 % did not translate it at all.

9- “In order to arrive at a just conclusion on evolution we should consider the geographical distribution of organism, their *geological* succession, their *homological* development, and their rudimentary organs.”

This sentence contains two terms; “**geological**” and “**homological**”. These terms have been analyzed in the students’ translations as the tables illustrate.

Nine sentence: Term one : **Geological**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Geological	1- الجيولوجية / جيولوجي	40	71%	Naturalization Neologisms
	2- علم طبقات الأرض	2	4%	
	-No equivalent	7	12.5%	
	-No translation	7	12.5%	
Total		56	100%	

Table 19: Translation of the Term **Geological**

The above table shows that the term " Geological " was translated by 42 students who provided two different translations methods; neologisms and naturalization. 40 students, with average of 71%, translated the term into (الجيولوجية/ جيولوجي) by using the method of naturalization where they adapted the English term to Arabic pronunciation and 2 students, with average of 4%, translated it to(علم طبقات الأرض) using the method of neologisms which is the best and the most successful one. 12.5% of students failed to give an equivalent for the term " geological ", by translated it into such words like(الجغرافية/ الجغرافي/ جولوجيون). The rest of the students with a percentage of 12.5 % did not translate it at all.

Nine sentence: Term two : **Homological**

The English Term	Suggested Translation	Frequency of Occurrences	Percentage%	The Method Used
Homological	1- متماثل / متجانس	26	46%	Neologisms Transcription
	2-homological	2	4%	
	-No equivalent	18	32%	
	-No translation	10	18%	

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Total		56	100%	
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Table 20: Translation of the Term **Homological**

The above table shows that the term “homological” was translated by 28 students who provided two suggestions (متماثل / متجانس and homological), using two methods which are; neologisms and transcription. 46% of the total students translated the term as (متماثل/ متجانس) using pure Arabic words. The other suggestion “homological” cannot be accepted as an equivalent because it is not a rendering; the term is still as it is in the English language. 32% of students made no equivalent for the term and gave such words as (تطويرهم البشري/ هيملوجيا/) (الهيملوجيكل/ صوت الكلام/ مشاكلهم), it does not carry any sense in Arabic at all, whereas, the rest of the students with a percentage of 18 % did not translate it at all.

7. The Analysis of the Methods Used in Translating Scientific terms

It has been stated earlier that there are five strategies used in translating scientific terms; transcription, naturalization, derivation, revival and neologisms. The table below illustrates the strategies that have been chosen by the students in translating the scientific terms that mentioned in the test.

Terms and Strategies Used in Translation						
		Transcription	Naturalization	Derivation	Revival	Neologisms
1	Pedal Pull	—	—	—	—	46
2	Gramophone	7	—	—	—	44
3	Disc	3	—	—	—	40
4	Electromagnetic	—	11	—	—	42
5	An acid	3	—	—	—	52
6	Petroleum	—	54	—	—	—
7	Fossil	—	—	—	—	50
8	Zooplankton	—	45	—	—	—
9	Electronic	—	53	—	—	—
10	Computer	45	—	—	—	11
11	Log on	—	—	—	—	42
12	Click	—	—	—	—	43
13	Outlook express	3	—	—	—	31

14	Window	17	—	—	—	22
15	Desktop	—	—	—	—	27
16	Toolbar	—	—	—	—	46
17	Antibiotic	—	—	—	—	53
18	Penicillin	49	—	—	—	1
19	Geological	—	40	—	—	2
20	Homological	2	—	—	—	26

Table 21: **Strategies used in Translating Scientific Terms**

The above table demonstrates that from five translation strategies, the students used only three; transcription, neologisms and naturalization. The total number of the terms that have been transcribed are (8), while the number of terms that have been translated using neologisms are (17) and the number of terms that have been translated using naturalization are (5). The most used one was "Neologisms" with percentage of occurrences 85%, then "Transcription" occurred with percentage of 40%, after that "Naturalization" occurred with percentage of 25%. Some of the terms that have been transcribed do not have any equivalent in Arabic language as: "outlook express" and others have equivalents, but the students did not bother themselves to find pure Arabic term and they preferred the easy method "transcription" as in "computer" and "windows". The table also shows that some terms have been translated by two methods as in computer, outlook express, windows, etc.

8. Conclusion

The study aimed at investigating the difficulties faced by Yemeni students at the English Language Department, Faculty of Arts, Thamar University in translating scientific texts from English into Arabic. The majority of students found it hard to get the equivalent of the scientific terms. The information obtained by the test revealed that a great number of students used a method of neologisms intend at using pure Arabic vocabularies, while others preferred another methods which did not serve the Arabic language as transcription and naturalization; in that they ended up with incorrect translation. In addition, it appeared that some terms have been translated by two methods as in computer, outlook express, windows, etc. The result also showed that even the students used a suitable method, they could not give acceptable equivalents, and this was due to the lack of information related to technical translation, and they do not have a good mastery of the two languages. This should be taken as a sign that Arabic language lacks of scientific

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vocabulary, therefore one should pay more awareness and give high significance to scientific translation theory and its methods that would lead to the development of Arabic language.

9. Recommendations

The researcher believes that the following recommendations may help in overcoming the difficulties faced by the students in translating scientific terms and expressions:

- 1-Encouraging students to read a lot of texts, researches and scientific articles related to technology.
- 2- Teaching and introducing all translation difficulties of scientific terms in details;
- 3-Teaching students the methods of translating English scientific texts to Arabic;
- 4-Engage in technological and scientific seminars and conferences to gain more terminologies in the fields of economy, medicine, politics and agriculture, etc.

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Appendix

Translate the following sentences into Arabic:

- 1-The first bicycle with pedal pull was produced in German.
- 2- The very first gramophone was constructed in 1887 by the German inventor Emile Berliner. The sound was recorded to a plane rotating disc of zinc covered with wax.
- 3- Electromagnetic waves are used to carry the sounds which we hear on the radio.
- 4- An acid is neutralized by an alkali to form a salt.”
- 5- Most petroleum is a fossil fuel, formed from the action of intense pressure and heat on buried dead zooplankton and algae.
- 6- In electronic conversation programs, the students are each sitting in the front of a computer screen and log on.
- 7- Click the outlook express icon on the window desktop or in the quick launch toolbar.

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8- The Englishman Sir Alexander Fleming discovered the antibiotic properties of penicillin.

9- In order to arrive at a just conclusion on evolution we should consider the geographical distribution of organism, their geological succession, their homological development, and their rudimentary organs.