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Adab Al-Rafidayn Journal

**A refereed journal concerned with the publishing of scientific researches
in the field of arts and humanities both in Arabic and English**

Vol. Ninety-Two / year Fifty- Three /Shabban - 1444 AH / March 2023 AD

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- The researcher works to determine the importance of his research and the goals that he seeks to achieve, and to determine the purpose of its application.

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- Consideration should be given to the design of the research, its final output, and the logical sequence of its ideas and paragraphs.

- The researcher should take into consideration the choice of references or sources of information on which the research depends, and choose what is appropriate for his research taking into account the modernity in it, and the accuracy in documenting , quoting form these sources.

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Editor-in-chief

CONTENTS

FOREIGN RESEARCHES

Title	Page
<i>Students' Possible self as a Motivator in Learning Translation</i> <i>Osama Hameed Ibrahim & Mohammed Basil AlAzzawi</i>	20 – 1
<i>The Translation of the verb of appropinquation (Kada / كاد) in the Glorious Quran into English</i> <i>Anwar Ali Mohammed& Abdulrahman Ahmed Abdulrahman</i>	39 – 21
<i>The Challenges of Translating English Alternative Questions into Arabic</i> <i>Marwa Mwafeq Basheer& Halla Khaled Najim</i>	49 – 40
<i>Personal Pronouns and Their Relation to Number System in English and Arabic: A Contrastive Study</i> <i>Noor Duraid Alazzawi & Halla Khaled Najem</i>	63 – 50
<i>Problems of Translating Iraqi Marriage Contract into English</i> <i>Ali Mohamed Al-Jawali& Luqman Abdulkareem Nsser</i>	77 – 64
<i>Linguistic features of scientific texts in translation</i> <i>Ayman Nehad Abdulmajeed & Layth Nawfel Mohammed</i>	92 – 78
<i>Orientalist Eyes in Gertrude Bell's Persian Pictures</i> <i>Hasan Moayad Hamid</i>	107- 93
<i>Application of Reiss's Model to the Translation of Arabic Modern Novels into English</i> <i>Abeer Abdullah Khodher & Salim Fatehe Yahya</i>	143-107
<i>A Quantitative Analysis of In-Group Responses on Converging and Diverging on Facebook</i> <i>Hadeel Thaer Ibrahim Aldabagh& Ashraf Reyadh Alallaf</i>	159-144
<i>Loanwords in Mosuli Arabic with Reference to Car Mechanics Jargon</i> <i>Haneen Majeed Almetwaly & Ashraf Reyadh Alallaf</i>	178-160
<i>A Pragmatic Study of the Speech Act of Criticizing in Mosuli Arabic with Reference to English</i> <i>Mohammed Abdulatif Jasim& Ebaa Mudhafer Alrasam</i>	201-179
<i>A Pragmatic Study of Irony in Iraqi Arabic</i> <i>Ali Hussein Baba& Ebaa Mudhafer Alrasam</i>	222-202
<i>Structural Ambiguity in Selected Arabic Literary Texts</i>	241-223

<i>Nadya Shaker Jumaa & Marwan Najeeb Tawfeq</i>	
<i>Relevance – Comprehension Heuristics of Translation Process: A Case Study on Literary Translation</i> <i>Mohamed Nihad Ahmed</i>	259-242
<i>Identity, Migration, and Assimilation in Nadine Gordimer’s The Pickup</i> <i>Haider Najee Shanboj Alaliwi</i>	280-261
<i>La condition de la femme camerounaise dans Les Impatientes de Djaili Amadou Amal</i> <i>Hanan Hashim Mohammed Saed</i>	304-281

Linguistic features of scientific texts in translation

Ayman Nehad Abdulmajeed*
Layth Nawfel Mohammed**

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Abstract

There is a wide comprehension that scientific data is indistinguishably associated with language and that language is comparatively essential to our ability to tentatively think. The current paper targets applying the criteria (Accuracy, Technical Vocabulary, Register, Cohesion, Coherence, Idiom, and Punctuation) recommended by the London Linguistic Institute to the assessment of the translation of English scientific texts into Arabic to show how many the students effectively follow these models in their renderings. The issue is that logical and specialized interpretations from English to Arabic do not precisely pass on the data remembered for the source works. Moreover, the vast majority of this material comes up short on exact portrayal of maxims, as well as the essential association of ideas, thoughts, and sentiments, to the place where huge variations exist between what is said in any case and the items in the TL message. It is conjectured that precise, firm, intelligible, and justifiable interpretation is the principal challenge for the students. Therefore, the students and translators should be very careful when translating scientific texts in their various fields, whether physical, chemical, medical,...etc

Keywords: linguistic features, the features of scientific texts. translation

* M.A Student / Dept. of Translation / College of Art / University of Mosul

** Prof.Asst. / Dept. of Translation / College of Art / University of Mosul

1.1) The study hypothesizes the following :

- 1- Producing accurate, cohesive, coherent, and understandable translation is the main challenge to the student translators.
- 2- Adopting the criteria suggested by the London Linguistic Institute is the best way to produce appropriate translations.
- 3- Adopting different strategies by student translators leads to different translations of the same scientific text which expresses facts, maxims and hence provides inappropriate renderings.
- 4-Idioms in scientific texts constitute an obstacle in the way of the student translators.
- 5-Ignoring the punctuation in translating results in confusion in the understanding of the translated texts.

1.2) Aims of the study

- 1-The main aim of the present study is to highlight some shortcomings in the rendered scientific and technical texts.
- 2-A further aim is to specify the fundamental requirement of a successful translator of such texts through the analysis of the performance of selected samples in this respect.
- 3-To enrich the libraries and pave the way for the readers to broaden their knowledge regarding this significant subject.
- 4-Scientific texts minimize the chance for the readers to interest while reading such subjects so this study aims to reflect bright side of such texts.

1.3) Procedures and Data Collection

- 1-Shedding light on the features of scientific texts in both English and Arabic.
- 2-Choosing randomly 20 scientific texts from different internet scientific websites to be translated by 8 M.A. students.
- 3-Applying the criteria suggested by the London Linguistic Institute Accuracy, Technical Vocabulary, Register, Coherence, Cohesion, Idioms, and Punctuation to the translations of the student translators.

4-Assessing the renderings of the student translators to identify the success and failure in accordance to the criteria and proposing a translation wherever we do not find an appropriate one.

5-esting the findings to identify the ratio of failure and success in the renderings of the student translators.

2. Introduction

These days, there is a monstrous agreement about the confirmation that scientific information is "reliant unpredictably on language and language is likewise integral to our capacity to think deductively " (Evagorou and Osborne 2010: 136). The two separate elements of language in science are shown: language as a medium through which known bits of information are passed on, and language as an interpretative framework energetically used to deliver and fortify new understandings. In which text, Sutton protects moving from the focusing on language as a method used to move theoretical data toward tolerating language as a technique for significance - delivering (Sutton1996:1-18). Since reading and writing are exercises that are constitutive of science, and since the language of science is muddled and unfamiliar to many, understanding scientific texts in a moment or unknown dialect is extremely challenging for readers of EFL (English as a Foreign language), for not just they need to run the English as a Foreign language etymological experiences, yet they need to decipher the language of science and its numerous science thoughts too (Fang, 2006; Flowerdew, 1993; Abdul-Hamid, 2011). As per Atkinson and Halliday (1988), specialists concur that reading scientific texts is exceptionally hard in any event, for local speakers as the texts are frequently "educationally escalated, grammatically complicated, and semantically and thoughtfully "field-explicit". As a matter of fact, understanding scientific texts requires the knowing about broad English, yet the language too, " manner of speaking and wording" of science (ibid.).

3) The features of scientific texts.

One of the most important features of this type of texts is precisely related to the use of language, since scientific texts use technical terms or a specialized lexicon that corresponds to the specific area in which they are developed. Thus, we find that the areas on which this language

is usually used are related to fields such as physics, chemistry, mathematics, etc.

3.1) The linguistic features of scientific texts:

A scientific text (henceforth SCT), according to Lowe (2009), is a style of writing as a result of the development of science. It is distinguished by accuracy in logic and accuracy in thinking. This kind of writing is typically formal in style and serious in nature. It is not taken as its goal a creative beauty of language. Rather, it tries to obtain clarity in logic and accuracy in meaning. Therefore it has its own linguistic features distinguishing it from other kinds of English texts and other English styles. There are many projecting linguistic features at several levels of language. These characteristics are discussed in the following section and on various levels of linguistic analysis.

3.2) The syntactic level

Syntactic deals with the patterns of word arrangement and formulates rules for correct sentence building. Sometimes a need arises to intensify the utterance and the normative structures are replaced by what is traditionally called rhetorical figures, figures of speech or syntactical stylistic devices. We also need to consider rules of grammar in order to define the logical meaning as well as the correctness of the sentences.

a) The extensive use of passive voice

Hiding the agent, according to Fang (2006), is a common attribute in scientific language. It permits texts to be written without – or at least with fewer – personal pronouns, thus decreasing the level of personalized connections within the text. This is often obtained through extensive use of **passives**. Passives permit the author to transfer focus from objects or the people responsible for an action and to confirm instead the phenomenon/process/results (e.g., (1) ‘*Mineralogical analysis **was done** using the polarizing microscope*’) (Gallela et al.).

b) Extraposition

The high frequency of extraposition, according to Quirk et al. (1985), may be due to its role in information packaging. In extraposition, the

semantically empty or anticipatory ‘it’ in initial position in the matrix clause indicates to a clausal item, non-finite or finite, placed in the postponed extraposed clause *e.g.*, (2) “*it is the aim to predict difficulties*”. Another clarification for the high frequency of extraposition in the scientific discourse is attached to the hedging concerns phenomenon *e.g.*, (3) “*it is possible to predict difficulties in this chapter*”. The scientist can thus make a subtle commentary on the validity of the information placed in the extraposed clause without appearing overtly in the text. (See also, Vries, Mark de. 1999).

c) Cleft sentences

Clefts, according to Halliday (1976), have been described as "equative", "stative" (Delin and Oberlander 1995) and as "variable-value pairs", where the cleft constituent gives a variable expressed by the cleft clause (Herriman 2004, Declerck 1994, Halliday 1993). A major area of interest with regard to cleft constructions involves their information structure. The notion of "information structure" attaches to the kind of information encoded in a particular utterance that can be one of these three: NEW information: things that the speaker/writer expects their hearer/reader might not already know. GIVEN information: information that the speaker/writer anticipates the hearer/reader may be familiar with. INFERRABLE information: information that the speaker/writer may anticipate the hearer/reader to be able to infer either from world knowledge, or from prior discourse. The reason why information structure plays such a significant role in the field of clefts is largely due to the fact that the organization of information structure is tightly attached to the clefts' function as concentrating devices used by speakers/writers to draw attention to prominent parts of their message *e.g.*, (4) “*what this chapter aims to do is to predict difficulties*”. While it may be reasonable to suppose that the variable of a cleft (that is, the material encoded by cleft clauses) may be typically given and its value (expressed by the cleft constituent) is NEW, it is not always so. Sometimes, neither element includes new information, as is in some demonstrative clefts, *e.g.*, (5) “*That is what I think*” and sometimes it is the cleft clause that includes the new part of the message, as in *e.g.*, (6) “*And that's when I got sick*” (Calude 2009). Finally, according to

Lambrecht (2001), in some constructions, it is the equation between cleft clause and cleft constituent that brings about the newsworthy information, rather than any of the elements of the cleft themselves.

d) The Use of abstractions

Abstraction, according to Edling (2006), is another way to decrease personification, i.e. to switch the concentration from “the doers” to “what is done”. The level of abstraction in a text relies on several factors, but two attached factors stand out as especially significant: technicality and grammatical metaphor. Technicality is more than a set of terms; it is taxonomically linked to technical terms, which organize reality in a different way than common sense does (Martin, 1993). Most technical terms are nouns, often created by noun compounding or expanded noun phrases with multiple modifiers. Such modifiers are mostly adverbs or adjectives that specify certain characteristics, thus strengthening the precision of the language. A grammatical metaphor indicates to when one sort of grammatical structure replaces another. In science, nominalizations – i.e., switching adjectives or verbs into nouns – are a grammatical metaphor commonly used to express processes or qualities as entities, thus often hiding the agent (Halliday & Martin, 1993). Scientific writing privileges nouns – especially extended and nominalized nouns – as they can present previously mentioned information as entities (Fang, 2005), thus increasing the packing of the information. Verbs and nouns can thus be regarded as complimentary, as intense language use (as in science) has more nouns and fewer verbs, and vice versa for less dense language. For instance, the verb “*expand*,” which — in a more abstract expression — could have been nominalized into *expansion*. That nominalization would have made it possible to form a sentence with hidden agency: e.g., (7) “*To allow for expansion of the tracks on hot days*, or even a shorter, more compact sentence: *To allow for expansion on hot days*. The verbs *cool* and *vibrate* can also be nominalized into *cooling* and *vibration* (Foy, Arora & Stanco, 2013). The nominalized verbs in the examples above can also be seen as technical terms. Technical terms intensify information, i.e. increase the packing of information, but the process of forming such terms often results in increased word length such as *Rate of Photosynthesis*. Such

long words may be unfamiliar in everyday language, but might have been reiterated many times and are likely to be more easily understood if the reader has encountered them several times before (ibid.)

4) The model adopted

The model adopted is: The Application of London Linguistic Institute Criteria to the Assessment of the Translation. This model includes criteria such as: Accuracy, Technical Vocabulary, Register, Coherence, Cohesion, Idioms and Punctuation. That is why translators should not only achieve the meaning of a text, but to apply these criteria and take this model into consideration. By applying this model, the translators will be able to judge their translations whether they are appropriate or not.

SL-Text 1

1- Plants synthesise hundreds of chemical compounds for functions including defence against insects, fungi, diseases, and herbivorous mammals.

١- تقوم النباتات بتوليف مئات مركبات الكيميائية للوظائف، ضمنهم الدفاع ضد الحشرات والفطريات والأمراض والتدبيبات العاشبة (الحيوانات الثديية وآكلة الأعشاب).

٢- تقوم النباتات بتجميع المئات المركبات الكيميائية لوظائف تمثل الدفاع ضد الحشرات و الأمراض أيضاً تدبيبات العشبية.

٣- تصنع النباتات المئات من المستحضرات الكيميائية التي تستخدم في وظيفة الدفاع ضد الحشرات و الأمراض والتدبيبات الآكلة للأعشاب

٤- تركيب النباتات المئات من المركبات لأغراض متعددة من ضمنها الدفاع ضد الحشرات والفطريات والأمراض والحيوانات العاشبة.

٥- تقوم النباتات بإنتاج المئات من المركبات الكيميائية للقيام بوظائف تشمل الدفاع عن نفسها ضد الحشرات والفطريات والأمراض والتدبيبات العاشبة.

٦_ تنتج النباتات المئات من المركبات الكيميائية لوظائف بما فيها الوقاية من الحشرات و الفطريات و الامراض و الحيوانات التي تقتات على الاعشاب

٧_ تقوم النباتات بتجميع مئة المركبات الكيميائية لوظائف تتضمن الدفاع ضد الحشرات و الفطريات و الأمراض و الثدييات العاشبة

٨- تولف النبات المئات من المركبات الكيميائية لوظائف منها الدفاع ضد الحشرات و الفطريات و الامراض و الثدييات العاشبة.

Discussion

Some translators have failed in applying this criterion. For instance: the translator number 2 has omitted the word الفطريات (fungi). The translator number 3 has rendered the word (compounds) into المركبات instead of المستحضرات. In addition, he has omitted the word الكيميائية (fungi). The translator number 4 has omitted the word الكيميائية (chemical). In addition, he has rendered (for functions) into اغراض instead of للقيام بوظائف. The translator number 6 has not rendered the word (mammals) الثدييات while the translators number 1, 5, 7 and 8 have succeeded in applying this criterion. Regarding technical vocabulary, all translators have succeeded in this criterion. In the register, all translators have taken this criterion into account when meeting subject field. However, the translators number 1 and 2 have failed in taking the textual metafunction into account. In coherence, all translators have succeeded in applying this criterion except the translators number 1 and 2. In cohesion, all translators have succeeded in applying this criterion by rendering the additive conjunction (and) into و which belongs to the grammatical cohesion. In punctuation, the translators numbers 3, 6 and 7 have failed because they did not put (full stop) النقطة at the end of the text. In addition, they have used (underscore) الشرطة السفلية instead of (hyphen) الشرطة while the translators number 1, 2, 4, 5, and 8 met this criterion. The appropriate rendering is that of translator number 5.

SL-Text 2

2- Nursing is a profession within the health care sector focused on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life.

١- التمريض مهنة في قطاع الرعاية الصحية، التي تركز على صحة أفراد وعائلات ومجتمعات حتى يتمكنوا من تحقيق أو الحفاظ أو إستعادة صحة أفضل و جودة الحياة

٢- التمريض مهنة في قطاع الرعاية الصحية تركز على العناية بل فرد و العائلات و ايضا المجتمعات، لكي يتمكنوا من وصول الى صحة و نوعية حيات افضل.

٣_ التمريض هو مهنة ضمن قطاع الرعاية الصحية يركز على العناية بالأفراد و العوائل والمجتمعات بغية حصول تعزيز او استعادة الصحة الكاملة وجودة الحياة.

٤- تعد مهنة التمريض احدى المهن ضمن القطاع الصحي و تركز على العناية بالافراد والعوائل والمجتمعات وتهدف الى تحقيق والمحافظة على او استعادة مستوى الحياة المثلى.

٥- ان التمريض هو احد مهن قطاع الرعاية الصحية التي تختص برعاية الافراد والعوائل والمجتمعات لكي يتمتعوا او يحافظوا على او يستعيدوا الصحة المثلى والحياة الرغيدة.

٦- يعد التمريض مهنة ضمن قطاع الرعاية الصحية تركز على العناية بالافراد و العوائل و المجتمعات لذلك قد يحققوا و يعززوا و يستعيدوا صحة مثالية و نوع من الحياة.

٧- التمريض هي مهنة في قطاع الرعاية الصحية التي تركز على رعاية الافراد و العائلات و المجتمعات حتى يتمكنوا من تحقيق أو الحفاظ أو استعادة صحة الأفضل و نوعية الحياة.

٨- تعد مهنة التمريض اختصاصا ضمن قطاع الرعاية الصحية والتي تركز على رعاية الافراد و العوائل و المجتمعات حتى يتمكنوا من الحفاظ و الحصول و استعادة الصحة المثالية و مثالية الحياة.

Discussion:

In Accuracy, the translator number 1 has failed in rendering the word (care) which is رعاية instead of صحة. The translator number 2 has omitted the words الحفاظ (maintain) and استعادة (recover) from his rendering in addition to mistranslating the word (attain) which is وصول instead of تحقيق. The translator number 3 has also omitted the word تعزيز (enhance) in addition to adding the word الحفاظ (maintain) which is unjustifiable, the same mistake reoccurred with the translator number 5 who has failed in giving the accurate meaning of (attain) which is يحقق instead of يتمتعوا in addition to mistranslating the word (focuses) which is تركز instead of تختص. The translator number 4 has omitted the word الصحة (health). The translator number 6 has mistranslated the word (maintain) which is يعززوا instead of الحفاظ as well as (quality of

life) which is نوع من الحياة instead of جودة الحياة while the translators number 7 and 8 have succeeded in applying this criterion. Technical vocabulary has been taken into consideration by all translators. In register, the translators number 2, 3, 6, and 8 have failed in textual metafunction while the translators number 1, 4, 5, and 7 succeeded in applying this criterion. In coherence, the translators number 2, 3, and 6 have failed while the translators number 1, 4, 5, 7, and 8 succeeded in applying this criterion. Concerning cohesion, the translators 2, 6, and 8 have failed in differentiating between the additive conjunctive و (and) & coordinating conjunction أو (or) while the translators number 1, 3, 4, 5, and 7 succeeded in applying this criterion. In punctuation, all translators have succeeded except the translators number 1 and 3 because the former has not put (full stop) النقطة at the end of the text while the latter used (underscore) الشرطة السفلية instead of (hyphen) الشرطة.

Our suggested rendering of SLT is:

يعد التمريض مهنة في قطاع الرعاية الصحية و التي تركز على رعاية الأفراد والعائلات والمجتمعات لذلك قد يتمكنوا من تحقيق أو الحفاظ على أو استعادة الصحة المثالية ونوعية الحياة.

SL-Text 3

3- A physics laboratory might contain a particle accelerator or vacuum chamber, while a metallurgy laboratory could have apparatus for casting or refining metals or for testing their strength.

١_ قد تحتوي مختبر فيزيائي من جسيم مسرع أو غرفة فراغ، بينما قد تكون لمختبر علم المعادن أدوات للصب أو لتنقية المعادن أو لإختبار قوة المعادن.

٢_ قد يحتوي مختبر الفيزياء على معجل جسيمات او غرفة تفريغ، بينما مختبر المعادن يحتوي على جهاز لصب أو تنقية المعادن او لاختبار قوتها.

٣_ قد يحتوي مختبر الفيزياء على مسرع جزيئات او حجرة مفرغة، في حين ان مختبر المعادن يمكن ان يحتوي على اجهزة صب وتنقية المعادن او اجهزة اختبار صلابتها.

٤_ يمكن ان يحتوي مختبر الفيزياء على مسرع لجزيئات او حجرة لتفريغ الهواء بينما يحتوي مختبر المعادن على جهاز لفصل او تنقية المعادن او اختبار مدى صلابتها.

٥_ قد يحتوي مختبر عالم الفيزياء على مسرع جسيمات او غرفة تفريغ، بينما يمكن ان يحتوي مختبر المعادن على جهاز لصب او تنقية او اختبار قوة المعادن.

٦_ قد يحتوي مختبر الفيزياء على اداة تسريع أو حجرة فارغة، بينما يحتوي مختبر علم المعادن على أدوات لصب أو تكرار المعادن أو لاختبار مدى قوتها.

- ٧_ قد يحتوي مختبر الفيزياء على معجل جسيمات أو غرفة خواء، بينما يمكن أن يحتوي مختبر المعادن على جهاز لصب أو تنقية المعادن أو لاختبار قوتها.
- ٨_ قد يحتوي مختبر الفيزيائي على معجل مجسمات أو غرفة تفريغ، بينما يحتوي مختبر المعادن على أجهزة تنقية و حسب المعادن أو لأختبار قوتها.

Discussion

In accuracy, the translator number 1 is inaccurate because he has rendered the word (physics) into علم الفيزياء instead of فيزيائي. In addition, he has rendered the word (chamber) into حجرة instead of غرفة which is scientific expression. The translator number 2 is inaccurate because he has rendered the word (chamber) into حجرة instead of غرفة. The translator number 4 has rendered the word (casting) into فصل instead of صب. The translator number 5 has rendered the word (physics) into علم الفيزياء instead of فيزيائي in addition to mistranslating the words (chamber) which is حجرة instead of غرفة and (metallurgy) which is علم المعادن instead of معادن. The translator number 7 has rendered the word (vacuum) into خواء instead of تفريغ. The translator number 8 is inaccurate because he has rendered the word (physics) into علم الفيزياء instead of فيزيائي in addition to rendering the word (refining) into حسب instead of تنقية while the translator number 3 and 6 are accurate. Concerning technical vocabulary, all translators have succeeded in applying this criterion except the translators number 5 and 7 because the former has failed in rendering the words (chamber) which is حجرة instead of غرفة and (metallurgy) which is علم المعادن instead of مختبر المعادن while the latter has failed in rendering the word (vacuum) which is خواء instead of تفريغ. In register, all translators have succeeded in applying this criterion except the translators number 5 and 7 who failed in ideational metafunction. In addition, the translators number 5 and 8 have failed in textual metafunction. In coherence, all translators have succeeded in applying this criterion except the translator number 5. In cohesion, this text includes coordinating conjunction أو (or) and adversative conjunctive بينما (while) which were appropriately rendered by all translators except the translator number 8 who has rendered و (and) instead of أو (or). In punctuation, the translators number 1, 2, 3, 4, 7, and 8 have used الشرطة السفلية (underscore) instead of (barré) . In addition, the

translator number 4 has not used (comma)الفارزة while the translators number 5 and 6 have met this criterion.

Our suggested rendering of SLT is:

قد يحتوي مختبر الفيزياء على مُسرّع جسيمات أو حجرة تفريغ، بينما يمكن أن يحتوي مختبر المعادن على جهاز لصب أو تنقية المعادن أو لأختبار متانتها.

5) Conclusions:

In recent years, lots of attention has been paid to the scientific field as it is crucial and vital to the humanity in general, it is worth mentioning that students and translators should possess basic knowledge before translating such kind of translation. It is clear that linguistic features of scientific texts open the door for much information and lead the students and translators to exact path towards fulfilling translation appropriately. In addition, this study proves how this field of translation has been developed through different points of time.

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السمات اللغوية للنصوص العلمية في الترجمة

ليث نوفل محمد**

ايمن نهاد عبد المجيد*

المستخلص :

هناك فهم واسع النطاق مفاده أن البيانات العلمية مرتبطة ارتباطاً وثيقاً باللغة وأن هذه اللغة ضرورية نسبياً لقدرتنا على التفكير المبدئي. تهدف المراجعة الحالية إلى تطبيق المعايير التي أوصى بها معهد لندن اللغوي لتقييم ترجمة النصوص العلمية الإنجليزية إلى العربية لإظهار عدد الطلاب الذين يتابعون هذه النماذج بشكل فعال في عروضهم. تكمن المشكلة في أن التفسيرات المنطقية والمتخصصة من الإنجليزية إلى العربية لا تتقل بدقة البيانات المحفوظة لكتابات المصدر. فضلاً عن ذلك ، فإن الغالبية العظمى من هذه المواد تفنقر إلى التصوير الدقيق للقواعد ، فضلاً عن الارتباط الأساسي للأفكار والمشاعر ، إلى المكان الذي توجد فيه اختلافات كبيرة بين ما يقال في أي حال والعناصر الموجودة في رسالة لغة المصدر. من المفترض أن التفسير الدقيق والحازم والمعقول والمبرر هو التحدي الرئيس للطلاب. لذا ينبغي على الطالب و المترجم الحذر كل الحذر عندما يقوم بترجمة النصوص العلمية بمختلف مجالاتها سواء فيزيائية، أم كيميائية، أم طبية،... الى آخره.

الكلمات المفتاحية: السمات اللغوية، ميزات النصوص العلمية، الترجمة

* طالب ماجستير / قسم الترجمة / كلية الاداب / جامعة الموصل

** استاذ مساعد / قسم الترجمة / كلية الاداب / جامعة الموصل