Mathematical Terms Translation and the Translators' Background Knowledge: A Case Study of Translating Postgraduate Students' Abstracts in M.A Mathematics at Mu'tah University

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Abstract

The goal of this study was to investigate the effect of the translator's background knowledge on translating technical terms in scientific texts produced by postgraduate students at the Department of Science at Mu'tah University in Jordan. This qualitative and quantitative study composed 15 postgraduate students who finished their M.A in Mathematics at Mu'tah University in Jordan. The researcher selected the sample of the study randomly. The researcher used two research instruments that included textual analysis and semi-structured interview. The finding of this research demonstrated that background knowledge has a positive and negative effect on translating technical terms when translating postgraduate abstracts in the field of Mathematics. This study recommends that further future research be conducted to confirm and support the findings of this current study.

Keywords: Abstract, Background Knowledge, Technical Terms, Scientific Text and Mathematics.

1. Introduction

English is one of the important languages all over the world. It is spoken over 100 countries in the world as the first language. It is also taught as a second language by the majority of the world countries. As it is the world most usable language many scientists think to translate some of their achievements from English to Arabic and vice versa, as a method of cultural exchange between the countries. But they face some problems that include the lack of vocabulary, background knowledge. Translation is an endless learning process, as much as you translate as much as you find it an open field (Jabak, 2014). Translation is the technique of transferring the source language text to target language text (Bhatia, 1992). Translation is not just a structure, or transferring a sentence from one language to another; it is a matter of knowledge and culture. That is, a translator has to be familiar with the subject he/she is translating (Pei, 1949). Because background knowledge is one of things that contribute in developing successful translation process especially in scientific texts, there are technical terms that the translator can not handle when translating due to the lack of background knowledge whether in EFL or ESL. This may be related to varied factors such as educational, social and cultural settings. Thus, technical translation started in 1960s and focused on the source language from which text is translated. Technical translation refers to the translation of the scientific text from one language to another. As a result this study attempts to investigate the effect of translator's background knowledge on translating technical terms in scientific texts: a case study of mathematics postgraduate students' abstracts.

2. Literature Review

Much research has been conducted to investigate the problems of translation and translators whether in English as a foreign language or English as a second language contexts (Al Khotaba and Al Tarawneh, 2015).

Thawabteh (2009) conduct a study on the intricacies of English-Arabic subtitling at Al Quds University in Palestine. The sample of the study consisted 20 M.A translation students. The findings of the study indicated that students faced several linguistic, cultural and technical problems in subtitling which may jeopardize communication that thought to be crucial for target audience. The researcher used...
two research instruments included a video clip and an interview with Mr. Galloway conducted by the Sky News TV station. The study concluded some pedagogical implications that will hopefully help subtitling students deal with the problems in question.

Likewise, Khanfar (2013) conducted a research on the translation of Puns; a Semantic or Pragmatic Equivalent. This study was conducted at Al-Najah National University in Palestine. The sample of the study included a group of puns which are used in advertisements. The sample of the study was selected randomly. The researcher employed questionnaires to test whether participants adhere to the pragmatic or to the semantic equivalent. In addition, he employed the Pun Decomposition Process (referred to as PDP) to identify the pun word, assign the appropriate context and determine the accurate meaning. The findings reveal that punning as a rhetorical device is one of the aspects of indirectness; as a consequence, puns are inherently misleading (by virtue of the fact that each pun word obtains more than one meaning. This feature helps to explain why students frequently encounter difficulties when engaging with puns. Secondly, pun words are frequently associated with confusion and incorrect translations. The third finding is that both graduate and undergraduate English department majors of An-Najah National University confronted two main challenges: broadly speaking, these challenges could be reduced to context and culture. This study revealed that translators should attain vital information about the socio-cultural background of the context in which the pun words occur because it enhances the understanding of the pun words and enables translators to capture the real meaning of each individual pun.

3. Statement of the Problem

English is taught in Jordan as an EFL. Researcher in the area of English language teaching and translation in Jordan indicate that students face difficulties in translating postgraduate abstracts in the field of mathematics (Jabak, 2014). The role of the technical translator is to not only be a transmitter of information, but also to be a constructor of procedural discourse and knowledge through meaning because technical translators may also take on the role of the technical writer. So translator face difficulties when translating technical terms particularly in finding an equivalent for these technical words (Bhatia, 1992).

4. Research Objectives

The goal of this study is to investigate the effect of translator's background knowledge on translating technical terms in scientific texts: a case study of mathematics postgraduate students' abstracts. This study attempts to achieve the following objectives:

i. To investigate the effect translator's background knowledge on translating scientific texts in the field of Mathematics from Arabic language to English language.

ii. To examine the difficulties that translator face when translating scientific text.

5. Research Questions

This study addresses the following research questions:

i. How does translator's background knowledge affect translating scientific texts in the field of Mathematics from Arabic language to English language?

ii. What are the difficulties that translator face when translating scientific text?
6. Methods and Procedures

The sample of the study composed of 15 postgraduate students' abstract in the field of Mathematics. The participants were selected randomly from the Department of Science’s Library at Mu'tah University in Jordan. Textual analysis and semi-structured interview were employed to elicit data for this study from the postgraduate abstracts.

7. Discussion of the Findings

Table (1) below displays the effect of translator's background knowledge on translating technical terms in scientific texts: a case study of mathematics postgraduate students' abstracts.

<table>
<thead>
<tr>
<th>No</th>
<th>Insufficient Lexical and Background Knowledge Statement</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>Total 15 Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It is difficult to choose appropriate synonyms.</td>
<td>---</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>It is difficult to translate unfamiliar scientific terms.</td>
<td>--</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>It is difficult to translate words which have more than one meaning.</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>53.33</td>
</tr>
<tr>
<td>4</td>
<td>It is difficult to translate scientific expressions.</td>
<td>4</td>
<td>--</td>
<td>1</td>
<td>5</td>
<td>33.33</td>
</tr>
<tr>
<td>5</td>
<td>It is difficult to choose the exact meaning of some words.</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>9</td>
<td>60</td>
</tr>
<tr>
<td>6</td>
<td>It is difficult to translate some idioms and new word.</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>11</td>
<td>73.33</td>
</tr>
<tr>
<td>7</td>
<td>It is hard to spill the scientific words.</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>It is difficult to translate scientific Abbreviation.</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>13</td>
<td>86.67</td>
</tr>
</tbody>
</table>

Figure (1) below presents the effect of translator's background knowledge on translating technical terms in scientific texts: a case study of mathematics postgraduate students' abstracts.
Table (1) reveals that the analysis of the effect of translator's background knowledge on translating technical terms in scientific texts. Based on the analysis, it is indicated that two translators out of three state that it is difficult to choose appropriate synonyms when translating scientific text recording 40%. Also, it is presented that two translators out of three state that it is difficult to translate unfamiliar scientific terms in scientific texts recording 20%. On the other hand, it is displayed that all the translators state that it is difficult to translate words which have more than one meaning in scientific texts recording 53.33%. Also, Table (1) indicated that two of the three translators state that it is difficult to translate scientific expressions recording 33.33%.

In addition, the findings showed that two translator out of three state, it is difficult to choose the exact meaning of some words in scientific texts recording 60%. Similarly, it is revealed that all the translators states that it is difficult to translate some idioms and new word in Scientifics text recording 73.33%. It also pointed out that two translators out of three state that it is hard to spell the scientific words in scientific texts recording 20%. Finally, it stated that all translators state the difficulty to translate scientific abbreviation when translating scientific texts recording 86.67%.

8. Conclusion

In this study, the researcher investigated the difficulties that face the Jordanian translators in translating the scientific text of postgraduate students abstracts in mathematics from Arabic to English and visa versa. The researcher used qualitative analysis to help him to classify those issues that face the translator in translating the scientific words in mathematics. The study conducted that the background knowledge effect on the translatability from Arabic to English and vice versa. The researcher concluded that there is a significant relationship between translators knowledge and the translator ability in translation of technical terms in post graduate abstracts from SL to TL.

References


