

**Translation as a Technical Vocabulary Builder in ESP Classes:
A Case for the Use of Translation Activities in Teaching Technical English**

الترجمة كمكوّن للمفردات التقنية في أقسام تعليم الإنجليزية كلغة خاصة:
حالة استعمال تمارين الترجمة في تدريس اللغة الإنجليزية التقنية

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Abstract:

The present paper aims to investigate the role of translation activities as a comprehensive tool for the acquisition of the technical English language, clarifying confusing aspects, enriching specialized vocabulary and improving the knowledge of language and Technical background as well. First, an overview of the latest research into the implementation of translation activities in the ESP class will be provided. Then, the methodological developments in this area will be explored by focusing mainly on the factors to consider while preparing translation activities, the types, purposes and benefits of the suggested activities. Toward the end of the paper, a framework of research methodology for teaching technical vocabulary and technical writing will be presented.

Keywords: Acquisition; ESP; Teaching; Technical English; Translation Activities

ملخص:

ترنو هذه الدراسة إلى إبراز دور الترجمة في تكوين طلبة اللغة الإنجليزية لأغراض خاصة بهدف تحصيل الكفاءات اللغوية والمعرفية اللازمة و تطويرها و تعزيزها و توسيع معارفهم و صقل مهاراتهم في المجال التقني لضمان تلبية متطلبات سوق العمل.

ينطلق البحث من فرضية أنّ الترجمة وسيلة بيداغوجية ناجعة في تدريس اللغة الإنجليزية لأغراض خاصة ويقترح وضع تمارين الترجمة لتعزيز قدرة الطلبة على استيعاب النصوص التقنية حيث أنّ استخدام اللغة الإنجليزية لوحدها من شأنه أنّ يؤدي إلى التباس على مستوى المصطلحات التقنية و فهم خاطئ للمفاهيم العلمية.

الكلمات المفتاحية: تمارين الترجمة، تدريس، اللغة الإنجليزية لأغراض خاصة، الكفاءات اللغوية والمعرفية، اللغة الإنجليزية التقنية.

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1. Introduction

Globalisation has influenced communication on a worldwide scale as more and more people from different linguistic and cultural backgrounds are nowadays partners doing business together, running meetings and exchanging emails on a daily basis and English has hence become a common international language, but why English?

Thanks to the historical and economic developments, among other reasons, of two of the most important English-speaking countries, namely Great Britain and the United States, English has acquired a supremacy status and nowadays it is undoubtedly and officially recognised as the World's Lingua Franca (Crystal 2003; Graddol 1997a, 2006b).

This term, i.e., Lingua Franca is used to refer to the English variety spoken by people whose mother tongue is not English (Firth, 1996; Seidlhofer, 2001). However, while adopting English in the technical context this may pose linguistic problems leading to misunderstanding especially for non-native speakers as the use of adequate terminology is the key factor for an effective communication and many considerations should be given to teaching and learning English for Specific Purpose (ESP).

Teaching a foreign language implies teaching how the language is utilized in different contexts and when talking about ESP, translation is considered as a very valuable device to memorise new terminology, language structure, lexis and culture-related issues in both the source language (SL) and the target language (TL).

In fact, translation is communication over nations and it plays a noteworthy role in the international technical professional organizations. Translation activities are considered to be a good pedagogical tool to use in Technical English teaching and learning as recent literature in applied linguistics has shown significant signs of the revival of translation in language teaching (Malmkjaer, 1998).

Through translation activities, students will realise the differences in structures, learn vocabulary and make difference between confusing words. In William Schweers's 1999 study, the questionnaire revealed that over 88% of the students involved felt that L1 should be used in the English class (Schweers).

2. The Role of Translation in EFL and ESP Classes:

Numerous studies based on surveys (questionnaires / interviews) or other research methods, (Perkins, 1985; Prince, 1996; Hsieh, 2000 quoted by Chirobocea 2018; Brooks-Lewis, 2009; Kavaliauskienė, 2009; Dagiliene, 2012), reach the same conclusions that learners in general have a positive feedback regarding the implementation of translation activities and the use of L1, in both EFL and ESP classes.

Before going into deep with the role of translation in EFL and ESP classes, it is necessary to know the difference between them in order to have a clear view on the usefulness of the approach to be adopted.

2.1 EFL Vs English for Specific Purposes (ESP): What Differences?

There are similarities between English as a Foreign Language (EFL) and English for Specific Purposes (ESP) but, as we aim to look for the role of translation while integrating it into the language course design, we will shed light on the differences. The purposes are high on the list since teaching EFL and ESP have got different purposes and learning objectives.

In EFL, teaching is based on grammar and language structures in general. While teaching ESP, the language is adapted to the context in order to prepare the student to perform in a specific field and job-related tasks.

In other words, teaching EFL is teaching the language in all its general aspects and ESP is based on a specialised content. Focus will be thus on the acquisition of the language and the accurate terminology and all the material taught will be then integrated in the speciality field with the adoption of a different approach than the one used for teaching EFL.

When the teaching objectives are exposed, a special attention is given to the skills to be improved (Reading, Writing, Speaking and Listening). In this context, translation can be integrated alongside the other four and emerge as a fifth skill (Ross, 2000; Fernández-Guerra, 2014; Kic-Drgas, 2014).

In EFL, the programme is tailored to cover all the skills. However, in ESP, it is designed to work on some of them depending on the set up objectives related to the learners' competence and performance skills development. Then what approach to adopt while teaching ESP?

The study conducted by Ana B. Fernández-Guerra had similarly positive reactions as *“almost all participants subscribed to the view that using the mother tongue is quite normal when learning a FL”* and *“they also highly agreed on the fact that translation helps to contrast the students' native language with the FL”* (Fernández-Guerra, 2014).

Various researches regarding the role of translation in teaching a foreign language have been conducted, among them Angeles Carreres's 2006 survey about the usefulness of translation as a language learning device which concluded that *“L2 translation is unambiguously perceived by students as conducive to language learning”* and that *“translation is among the most effective methods to learn a language, if not the most effective”* (Carreres). We note also Posen Liao's conclusion which states that *“On the whole, the participants overwhelmingly believe that translating helps them acquire English language skills such as reading, writing, speaking, vocabulary, idioms, and phrases”* (Liao, 2006).

It is important to point that students may master the English language in its general aspects but still struggle in using it properly in some specific fields, contexts and situations. In terms of ESP, the 2007 study accomplished by Kavaliauskienė and Kaminskienė reveals that *“all the students are quite positive about the use of mother tongue in English classes, but the amount of it depends on learners' proficiency in English”* (Kavaliauskienė and Kaminskienė, 2007).

Translation is a communicative activity practiced within a meaningful context (Nord, 1997) while students should be able to understand the differences and

distinguish the context in which each terminology is applicable according to the linguistic and extra-linguistic factors.

In fact, by integrating translation; students can learn more about problem solving strategies, improve their analytical skills and strengthen their grammatical and lexical competence and performance (Leonardi, 2009).

These objectives vary according to the students' proficiency in English; for elementary levels, translation can be used to consolidate grammar, for intermediate and advanced levels, translation may be used to correct errors and point out interference and negative transfer (Newark, 1991, quoted by Ross, 2000; Popovic, 2001).

3. Specialised Vocabulary in ESP Classes:

Vocabulary is very important in ESP. It is an essential component of the specialised language teaching and can become even crucial in domains such as science and engineering. Students must therefore make the difference between confusing terms. The main question is how to set up a principled approach to teaching specialised vocabulary?

A special attention is given to vocabulary teaching in ESP classes. It is important to adopt the appropriate method and avoid focusing on every single word as the objective is to enable students to build a specialised vocabulary by teaching them the most effective strategies to acquiring it for a better communication and performance in their future professions.

In fact, learning vocabulary is not learning word-lists in isolation. It is much more than memorising words as students need to explore the word, its use, nuances, and collocations because one word can have different meanings depending on the context.

By integrating translation into the ESP course design, a contrastive bilingual approach is adopted allowing students to develop their ability to find an equivalent in L1 to match a lexical phrase in L2.

As per ESP theorists (Robinson 1991; Hutchinson & Waters 1987; Dudley-Evans & St. John 1998), the teaching of vocabulary in the ESP class can be divided into three compartments:

- (1) Technical vocabulary, where words are monosemic and are used exclusively in the domain in which they were created;
- (2) Sub-technical vocabulary, where words are taken from the general language but have acquired one or several new meanings within the specialised field of application. Words, in this case, are polysemic retaining their original meaning and, at the same time, adding the meanings coming from the specialised area; and
- (3) General vocabulary of frequent use in a specific area, where words come from the general language and retain their meaning in the specialised field. Words are not technical terms, but they are nevertheless needed in order to gain a full understanding of the text.

Several important methodological considerations have to be taken into account when teaching specialised vocabulary as learning requires consolidation and enhancement of partial knowledge. Most importantly, texts selected should be authentic and also contextualised.

4. Translation activities in ESP Classes:

Translation activities can be used in ESP class for various purposes, as David Atkinson proposes: cooperation among learners, reinforcement of recently explained items of grammar or vocabulary, checking for sense, and development of learning strategies (1987).

It can also be used as a cognitive, memory, affective, communicative, and compensatory learning strategy to boost learning effects (Ali, 2012).

In this context, many scholars propose different translation activities or ideas on how to integrate translation into existing ESP courses design such as pre- and post-translation activities (Popovic, 2001), or the translation of definitions of terms (Kic-Drgas, 2014), error correction through translation (Atkinson, 1993), translation as post-reading activity (Mahmoud, 2006) or back translating (Zhang & Gao, 2014).

From my experience, I noticed that these translation activities are very helpful in particular for teaching and learning specialised vocabulary which is technical vocabulary in this case. It is important to clarify that incorporating translation activities in the ESP course design is not meant for the training of professional translators but is rather a language learning device.

In my ESP course I used Arabic or French to English translation activities as a means to introduce specialised technical vocabulary and access various aspects of the Technical English language in contexts specific to the students' needs. "Translation here, then, is an operation on language use and not simply on language usage and aims at making the learner aware of the communicative value of the language he is learning by overt reference to the communicative functioning of his own language" (Widdowson, 1979). Among the aspects to be taken into consideration while preparing translation activities is the learner's level of English since a good command of English is not enough.

ESP teachers should take into account also the students' knowledge in the technical field which is very important in the translation process. The more the students know about their speciality, the easier it is for them to understand the text, processes, terminology, and nuances.

For instance, through specialised texts, the first year students learn new technical vocabulary but also enhance their technical background as they are encouraged to make research and prepare terminology records.

5- Teaching Technical Vocabulary and Technical Writing Through Translation

Activities:

Activity 1:

Objectives: To develop a deep processing of vocabulary related to the types of materials, qualities, costs and properties and the development of productive skills.

Text:

Materials

A mechanical engineer uses different materials to build **machinery or tools**. A specific knowledge of materials is required, concerning qualities, properties, costs and general characteristics. When a machine or a tool is made, the most suitable material must be chosen by considering its properties, which can be classified as mechanical, thermal, electrical and chemical. The main types of materials used in mechanical engineering are metals, polymer materials, ceramics and composite materials.

The most commonly used materials are metals, which can be divided into ferrous and non-ferrous. They can be used in their pure form or mixed with other elements. In this second case we have an **alloy** and it is used to **improve** some properties of the metals. The most commonly used ferrous metals are iron and alloys which use iron. Because iron is soft and pasty it is not suitable to be used as a structural material, so a small amount of **carbon** is added to it to make **steel** alloy.

Non-ferrous metals contain little or no iron. The most common non-ferrous metals used in mechanics are **copper, zinc, tin** and **aluminium**. Some common non-ferrous alloys are **brass** (formed by mixing copper and zinc), **bronze** (formed by mixing copper and tin) and other aluminium alloys which are used in the aircraft industry. Other examples of materials used in mechanical engineering are **plastic** and **rubber**.

PVC or polyvinyl chloride is a type of plastic and is used to **insulate wires** and **cables**: Rubber is a polymer and its best property is elasticity, as it returns to its original size and shape after deformation.

Ceramic materials are good insulators: hard, resistant and strong, but **brittle**. Composite materials are made up of two or more materials combined to improve their mechanical properties. **Concrete** is reinforced with steel and is used in building engineering. (Sopranzi.S (1997). Flash on English for Mechanics, Electronics and Mechanical assistance Ells.r.l.)

Questions: Students are asked to:

- 1- **Skim/ Scan the Text:** It takes few minutes. This will allow students to have a global overview and provide them with a general idea about the text. Through a first quick reading, students focus will be on the following points: the title of the text, the name of the author, the source, the subject matter, the form of the text, paragraph divisions, opening and closing clauses, how ideas are presented ...etc

- 2- **Critical Reading:** Students are asked to carefully read and analyse the source text, extract the key words and technical terminology. A special attention is given to every single word and idea presented. It aims to develop the students' critical thinking and analysing skills.

- 3- **Translation Activity:** students are asked to use dictionaries or glossaries of terms and prepare terminology records as a list, with an explanation or definitions for each term in English and give the L1 equivalent. This activity will allow a clear comprehension of the text in order to avoid misinterpretations and/or misunderstandings.

Discussion:

- Terminology records are helpful in the introduction of new terminology and students understand better vocabulary when compared with L1. They are also a useful tool to revise terminology and enrich vocabulary.

- Terminology records will help the students to understand new terminology (alloy / copper, tin / brass/ insulate wires/brittle/rubber/concrete/ PVC), to give / or choose the best fit from a list of definitions (a combination of different metals, a type of plastic used for insulation, a composite material used to build houses), and to recognize the qualities and properties of materials.
- English to Arabic or French translations are used to clarify the exact equivalent and thus meaning of specialized words. For example, in the present specialised text, Material related vocabulary is a key point in the lesson and through integrating the translation activity the exact meaning of each material, its properties and qualities was discussed and clarified and thus there is no room for confusion.
- Translation activities enable students to develop and further improve both their analytical as well as linguistic skills. They also allow highlighting other elements of vocabulary such as false friends and polysemy.

Activity 2:

Objectives: Write a technical document.

Passage :

Le procédé conventionnel d'oxydation et de filtration au sable vert est difficilement applicable aux eaux souterraines très chargées en fer et en manganèse. Lors de cette étude pilote, plusieurs modifications à ce procédé ont été testées en vue d'améliorer les performances de traitement d'une eau très concentrée en fer et en manganèse : ajout d'une étape de décantation, usage de sable et d'antracite recouverts d'oxydes de manganèse, aération forcée. Plusieurs oxydants et modes d'oxydation ont également été testés. Les résultats indiquent que la présence d'une grande quantité de fer a un effet significatif sur l'enlèvement du manganèse et confirment que l'oxydation du manganèse peut être complétée par le chlore libre dans un milieu filtrant autre que le

sable vert à condition qu'il y ait un excédent suffisant de chlore libre. Dans les conditions de l'étude, il ressort que la zone cible de performances de filtration peut être atteinte avec tous les modes de fonctionnement testés et avec un dosage en aide filtrant variant de 0,25 à 0,5 mg/L. L'aération entraîne une meilleure sédimentation mais provoque aussi une augmentation plus rapide de la perte de charge dans le milieu filtrant en présence d'aide filtrant.(Clerc, I, Kavanagh, E, Lesage, R, Bouchard, C (2004). *Guide de rédaction d'un rapport technique*. Université Laval.)

Questions: Students are asked to:

- Translate a technical document/ passage from French or Arabic into English.
- Define the linguistic and cultural difficulties encountered and discuss the strategies and techniques used to overcome them.

Discussion:

- Vocabulary learning goes beyond a simple definition or equivalent, at a further stage, learners will be able to understand the technical terms and concepts but most importantly use them appropriately according to the context.
- Translation activities are not limited to translating individual words in isolation and are developed. In addition to the terminology records task, the students are asked to generate sentences using specialised terminology.
- In the technical field, preparing a future engineer requires working on the writing skills as he will be called to prepare technical documents, reports, proposals and procedures.
- In order to produce a coherent technical document, both the style and the form should respect the context. A contrastive analysis through translation activities

will enable students to assess and make the differences between writing styles, structures, and forms in different languages (English/ French or Arabic).

- Through translation activities, students are taught the appropriate strategies to overcome language barriers and find equivalent and suitable terms and concepts in English.
- Improving the writing skills can involve also summarising/ paraphrasing the text in their own words.
- Translation is a way to engage in understanding a form of real life communicative function. (House, 2009). This kind of activities will help students to acquire the necessary common phrases and vocabulary related to their speciality as they offer them the linguistic tools needed to integrate their future professional life.

6. Conclusion:

Accuracy matters in the technical field. In fact it has a paramount importance and preparing future engineers in terms of ESP is hence crucial to enable them to match their future needs and communicate with each other in correct terms. We can say that using only English in teaching Technical English, in some situations, does not ensure the students understanding. ESP students acquire a better knowledge and understanding of the Technical English language and its aspects, especially confusing terms of specialised vocabulary. In this case, translation activities and L1 are employed as a learning device to facilitate the understanding of difficult terminology and domain-specific phrases. Radmila Popovic concludes: if a strong case for translation in the language classroom is to be made, at least three things ought to be demonstrated: that criticisms against it are not valid, that learners need it, and that it promotes their learning (Popovic, 2001).

To sum up, the success of TILT lies in its correct use as a working and learning tool, with appropriate activities that help students to contrast their native and foreign

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languages, to improve their language skills, and to see the usefulness of the task (Fernández-Guerra, 2014). In other words, when translation is planned for the ESP class, some factors need to be considered. Translation activities are to be designed according to the learners' needs and the texts should be authentic.

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