Teaching Languages to European Computer Science Students in an Engineering Institute in Portugal: Translation Approaches in the English, German and French Classroom

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Abstract | This paper aims at providing an analysis of using translation methods in teaching languages to undergraduates in the Transnational European Computer Science Engineering Degree in an engineering polytechnic institute in Portugal. The main language covered is English and includes a detailed analysis of a language activity on word formation with prefixes. Both German and French languages are also referred to so as to illustrate the different treatments each requires due to these languages' different profiles.

Accordingly, one of the reasons to consider translation of native language (L1) to second language (L2) tasks for the English subject is because challenging material is required for these students since often they have had at least seven years of language training from secondary school. On the other hand, groups' language levels tend to be quite heterogeneous. Data of students' grades from 2012/2013 academic years are used to illustrate a prototype of this feature, thus influencing an option of a challenging language activity of L1 to L2.

There is a discussion of translation techniques in language teaching indicating that there are more benefits than drawbacks. A brief discussion of this method in teaching languages, as well as its advantages and limitations is provided and based on scholarly research carried out.

The relevance of multilingualism and multiculturalism of our future engineers is hopefully understood and encouraged as a result of this work, as these professionals can no longer be restricted to proficiency in one or two languages. In what concerns the transnational courses, there is cause to consider the inclusion of translation approaches in transnational course degrees.

Key words | language, teaching, translation, multilingualism, European Computer Science, English for specific purposes

I. Introduction and Background Information

This paper is about teaching languages to European Computer Science undergraduate students at a polytechnic institute in engineering in the city of Coimbra in Portugal.

The European Computer Science three-year undergraduate degree is a transnational university course. Students study two years in Portugal and in the third and last year study abroad from a choice of countries including Finland, France, Germany, Italy, Romania and Spain. In this course students are required to have two years of language training in two foreign languages. These are English, which is compulsory, and either German or French. The main language analyzed in this study is English. However, a less detailed analysis of both German and French languages will also be included in this discussion.

This study is informative and practical and is based on the authors' experience in language teaching. Concerning the application of translation activities in language teaching, a discussion is provided on the method's pedagogical influences, which is based on research and other scholars' testimonies. With regards to this method of teaching for the English subject, data of students' grades and class attendance is illustrated to justify its use as a challenging language task.

The objectives of this paper are: 1) to provide an in-depth look at teaching word formation using prefixes in the English language through a translation approach of the native language (L1) into the second language (L2); 2) to illustrate the validity of translation tools in the language classroom especially in transnational course degrees; 3) to demonstrate the underlying pedagogical purpose and personal and professional outcomes this method is expected to provide engineering students who will study and work abroad.

Part II points out features European Computer Science course students share, regardless of the language they study and the countries they choose to go to. In Part III there is discussion of the use of translation methods in the language classroom and how other scholars

are viewing it. The final part is an analysis of the language activities with translation methods in mind. Main focus will be on the English language.

II. Common Features in the European Computer Science Course Degree

In this part, we will briefly discuss the common bonds students have in the European Computer Science (ECS) undergraduate course degree, regardless of the languages they choose to take and the countries they study in.

Firstly, ECS students are prepared to be multi-lingual as well as multi-cultural in the language classroom. The importance of being bilingual has become obsolete in Europe and therefore in any transnational European course. Hence, European college students studying abroad should be fluent in at least three languages: the native tongue, English and another language.

A merging point amongst the different languages is from a pedagogical perspective. Instructors make use of translation methods to develop not only linguistic proficiency, but also to understand and accept cultural diversity. ECS subjects are organized in a way to include information about international differences and all language subject syllabuses draw on respective cultures.

The ECS course plan also includes a specific subject called *European Module* that focuses on the diverse cultures within Europe. The syllabus of this subject comprises the frontiers between languages and cultures and the implications of linguistic and intercultural issues for the job market. Political, historical, social and cultural aspects of Europe are also included in their broadest sense.

Pereira *et al.* (2011) discussed in a report about the ECS course the cultural shock concerning a wide range of issues. In some countries, for example, administrative tasks are very complex. The same applies to documentation in the educational arena. The culture shock not only applies to customs, traditions and bureaucratic norms but to more intricate matters

including grading systems, educational demands, teacher student rapport, classroom procedures concerning projects and assignments, to name a few.

Finally, and as an indicator of how well students are able to apply what is taught to them in the language classroom, ECS students are required to pass internationally recognized exams before going abroad. The external language exams students must take include the Cambridge University First Certificate English Examinations or Cambridge Advanced Examinations. Students choosing French must take the exams offered by the *Alliance Française*, and for German exams are offered by the *ÖSD - Österreichisches Sprachdiplom Deutsch*.

III. Translation Methods in the ECS Language Subjects

A. Translation as a means of teaching languages in ECS

While on the one hand mother tongue referral in language teaching in the classroom continues to have negative connotations in this profession, on the other hand seems to have brighter and more tolerable tones (Simões and Guincho 459). The act of translation from one language to another is very much a natural and spontaneous mental action of many individuals who are in contact with more than one language.

In Portugal movies and TV programs are not normally dubbed but instead have sub-titles. Observers naturally read subtitles and listen to English or other languages at the same time. The music Portuguese youth listen to is primarily in English, and cerebral translations are automatically made in order to understand the lyrics and what the musician wants to convey. Concerning the academic world, both students and researchers alike study from sources in English, German, French or Spanish. As a result, self-study will be a part of a conversion process, which begins with the first language (L1). Translating in these situations is about negotiating language and is as unavoidable as the senses of perception. In Portugal it is rare, as well as difficult, to find academic research literature translated into Portuguese. Thus, the

Portuguese scholar has to find ways to understand the different languages of her or his specific area (Simões and Guincho 462).

As a natural part of human structure, it could be counter-productive to deny its use. Concerning the European Computer Science students who will be studying and living abroad, the ability to recognize similarities and differences is an important tool as these skills are transferred to other situations, namely professional, interpersonal and cultural relationships.

B. A discussion of translation as a teaching method

Constructivism, an educational method popular in Europe, relies on learners' past experiences to construct present and future knowledge (Machida). Thus, any learning cannot be separate from that which is prior experience. Concerning language, L1 and L2 (second language) are inseparable, since mother tongue language (L1) is part of the individual's construct and prior know-how.

From a physical angle regarding how the brain functions, Machida sums up what lies behind translation as an instinctive device and resulting useful tool.

> According to our current understanding of vocabulary storage in the brain (e.g. connectionist model of (Macaro), bilinguals access one common storage system containing both L1 and L2 vocabulary. L1 is thus considered to assist learners' comprehension of L2 by creating more networks between nodes (ideational representation and words) in their long terms memory. (142)

Given this stance, a translation strategy or referral to the mother tongue could partake one of the methods used in language teaching since it is a natural part of human individuals.

Vanessa Leonardi teaches English for Specific Purposes at the University of Ferrara in Italy. Her article focuses on the application of the translation skill in the four language skills plus the vocabulary and cultural aspects. According to her, for Business English it is an appropriate technique because there are not always equivalent translations from one language to the other. In this specialized language successful transfer or communication is vital to successful business

purposes. Concerning cultural aspects, cultural differences exist in the business world and include etiquette, business norms, etc. To this scholar, it is important for linguistic and cultural differences to be compared through translation thus "employing a contrastive approach to language" (Leonardi 150). This will also be pointed out when discussing the German exercise model in part IV.

Ts Dilkova uses translation in English teaching at the University of Chemical Technology and Metallurgy in Bulgaria. According to this author, in this country using translation as a technique in learning languages may become popular. The focus of the article is on cognitive psychology and its application in teaching language in which learners are involved and a responsible active member in the learning process. The link to the mother tongue will enable these learners to become more connected to the target language as in this author's opinion "grammar becomes less frightening and more accessible" (451). This scholar explains that cognitive instruction is a mental process and so the teacher needs to affect this part so that learning can take place.

Posen Liao's case study about Taiwanese learners' beliefs of using translation in learning English showed that learners in beginning stages of the language progression look highly to this strategy because it helped them with the skills and vocabulary and helped to reduce frustrations. Even at advanced levels, more proficient learners believed that translation was a useful tool and helped to develop further the language proficiency (201).

Machida performed a study on the effect of translation as a main strategy in teaching Advanced Japanese as a second language to English speaking natives in Australia. For the most part, students were pleased with the use of translation in language development, though there was disagreement on the quantity of its application. The final outcome was that translation as a main method was "feasible" (154). According to the author, translation as a technique needed to be improved on.

UNESCO has provided support of the use of Mother Tongue in education to fight discrimination and promote education especially for ethno-linguistic minorities. According to this organization, research has shown that results indicate educational achievement for ethno-linguistic minorities in Mother-Tongue-Based Multilingual Education programs carried out. At a conference about this subject matter, Kim Gwang-Jo, Director of UNESCO Bangkok, claimed that when education is taught in students' languages, learners "readily transfer literacy skills to official languages of education, thus acquiring essential tools for lifelong learning".

Most advantages of translation use in the classroom can include a sense of security especially when related to the affective factor of cognitive education (Dilkova 451; Liao 201; Machida). It is a continuation of a natural tendency connecting the learner's familiar world (mother tongue) to an unfamiliar one (target language).

Another advantage mentioned is that it can save time (Dilkova 151). In certain situations such as unknown vocabulary, it obviously saves time by providing a direct translation from L2 to L1 rather than pantomime it. Although this can be seen as an easy way out, it is, on the other hand, clearly more practical. This is especially workable with lexis that has an unambiguous translation. The word red, for example, has a simple meaning often very unequivocal.

Conversion to mother tongue to check concept meaning, for example, can be a means to detect common mistakes. An example of word order concerning this topic is found in Simões and Guincho (162). In English, for example, the common word order of the simple sentence is Subject + Verb + Object. The sentence: *I like chocolate very much* in Portuguese is translated correctly as *Eu gosto muito de chocolate*. In English *very much* comes after the object while in Portuguese, *very much* (or in Portuguese *muito*) is before the object. So there is a tendency for Portuguese learners of English to follow the Portuguese word order and say *I like very much chocolate*. If the learners know and understand the reason for this persistent mistake via translation exercises, they may more easily attempt to resist its repetition. Understanding the source helps to break bad habits since the common inaccuracy has been given a name.

Another benefit referred to is a sense of achievement felt by the learners (Dilkova 151). The conversion of L2 to L1 is more common so than the contrary. However, exercises in which L1 is converted to L2 are very difficult. A language learner able to do these demonstrates an ability to do one of the most difficult types of language exercises. These will be looked at when discussing the English language activity.

On the other hand, there are limitations in using translation activities in the classroom and certain conditions should be met. For example, the classroom should be monolingual. This is not much of an obstacle in Portugal since classrooms are quite linguistically homogeneous when compared to other European countries and certain cities (Paris, London, as examples).

Furthermore, a teacher may not be qualified since it is obvious that this professional needs to be fluent in the L1 language, as well as well-informed of the mother-tongue culture since language is inseparable from its culture. Simões and Guincho state the reason for this is so that the teacher is able to prepare an exercise correctly (162). If not done properly, translation exercises can be counterproductive and create problems. For example, an exercise should not be in a form so as to forcefully elicit a desired answer in the target language. The sentence in Portuguese: *Eu gosto muito de chocolate* (translated literally as *I like very much chocolate*) should not be *Eu gosto de chocolate muito* (translated literally to *I like chocolate very much*) so as to obtain the correct English translation. The Portuguese sentence *Eu gosto de chocolate muito* is not correct in terms of register since it is not the way it is said in Portuguese and is therefore unnatural. Hence, translation from L1 to L2 must take into account form, register, idiom and style of the L1 in order to be correct from a pedagogical perspective and to do this it is very difficult requiring teachers' fluency in both languages to do so (162). The importance of word order is also analyzed in the following part in teaching German as a second language.

For the most part, this kind of didactic material has to be "home made". It is unlikely to find instant made exercises from course books or the Internet. Furthermore, the exercise done for one group may not be able to be used for another one – even if very similar.

The following part provides model exercises of the use of translation in both English and German teaching.

IV. Language Activity Models Using Translation Methods

A. ECS English language subject

1. *Students' language background and present situation*

Most high school graduates have had at least 7 years of English instruction. English classes usually begin in the first year of middle school (5th grade) and continue until the 11th grade. In the last decade, this number has gradually risen as English has begun to be taught even in primary school.

It seems rather dubious that, after so many years of English instruction from high school, these undergraduates do not have at least a B2 level. Unfortunately, many recent high school undergraduates have between A2 and B1 English levels. On the other hand, most of these students can "get by" when communicating orally, and "informal" interaction levels can be quite good. This is due to the massive input of the English language through Internet, cinema, and music we discussed earlier. However, accuracy levels in both oral and written skills are outlandishly deficient. Levels can go all the way down to a low A2.

Out of the 21 students who sat the *Inglês II* final exam in the second semester, 2013, only 3 attended lessons on a regular basis and 2 of these have C1 levels. The third student had a low A2 level. Four of the 21 students attended lessons on an irregular basis and final scores were 10, 12, 14 and 19 with English levels of A2, a low B2, B2 and C1. The remainder 14 students never went to lessons and final grades were 8, 10, 10, 11, 12, 13, 14, 15, 16, 16, 17, 17, 18 and 19. The final exam is a B2 level exam, but students only achieve B2 level with a

grade of 12 or higher. Grades marked 18 and over are considered C1 level. For this group of 21, we have 2 with A2 levels, 4 with B1 levels, 3 with low B2 levels, 7 with B2 levels and 5 with either strong B2 levels or low C1 levels. Language levels, grades and class attendance of the *Inglês II* subject are charted in the table below.

Level	A1	A2	B1	B2 (low)	B2 (high)	C1 (low)
Grade Reference	7 or lower	8-10	10-11	12-13	14-17	18-20
Grades		8, 8	10, 10, 10, 11	12, 12, 13	14, 14, 15, 16, 16, 17, 17	18, 19, 19, 19, 19
Grades of students attending classes		8				19, 19
Grades of students NOT attending		8	10,10, 11	12, 13	14, 15, 16,16, 17, 17	18, 19
Total students & levels	0 (A1)	2 (A2)	4 (B1)	3 (lowB2)	7 (highB2)	5 (C1)

An important point here is a clear indication of spread out levels. Another point of relevance is that students with low levels, which are 4 (with grades 8, 10, 10, and 11 and in red print) and those barely achieving B2 levels, which are 2 (with grades 12 and 13), do not attend lessons. These account for 6 out of 14, a little less than 50% of those not attending lessons at all. The issue at hand now is to find an innovating and challenging way to revise language and present new language to a somewhat heterogeneous group with quite a few students with

upper-intermediate levels (B2). This is when the language instructor decided to use a method that could be challenging and somewhat advanced.

The next part will discuss the language issue of word formation with a focus on prefixes.

2. *English exercise sample*

This section is further divided into three building blocks. The first describes the aims and methods of the language exercise. The second shows the exercise. Then, a detailed explanation of the language and methods in the exercise is given.

a. Language exercise plan

Objectives:

1) Revise previous knowledge

2) Deepen knowledge of word formation

3) Break bad language habits

4) Stimulate automatic transition from mother tongue to L2

Language Focus: Word formation with a focus on prefixes

Method(s): Translation method – native language (L1) to second language (L2) – and dissection of word formation (prefix + root word)

b. Language exercise

Definition of Prefix: Generally when you add a <u>prefix</u> to a <u>root</u> word, the spelling of the prefix and the root words stays the same. A root word stands on its own as a word, but you can make new words from it by adding beginnings (prefixes). When you add a prefix to a word, the meaning of that word changes.

Prefix	Examples
-re	reappear, redo, replay, retake
-dis	disagree, disappear, disappoint, disbelief, disconnect, discover, dishonest, dislike, dismiss, disrespect
-im	immature, immoral, impatient, impolite, impractical
-il	illegal, illogical
-un	uncooked, unfriendly, unharmed, unimaginable, unintended, unkind, unlike, unlucky, unreal, unusual, unwanted
-ir	irregular, irresponsible
-in	Incapable, incredible, inhuman, invisible
-over	overboard, overcharge, overcrowded, overload
-under	underestimate, underweight
-post	Postgraduate
-ex	ex-husband, ex-President
-sub	submarine, subway
-mis	misinform, misinterpret, mispronounce, mistake

Exercise 1. Translate the sentences into English by using the word in parenthesis with the correct suffix.

1.   A situação é irreal. (real)

2.   Não devias subestimar as suas capacidades. (estimate)

3.   Ele cobrou-me a mais. (charge)

4.   O barco estava sobrecarregado. (load)

5.   As crianças em alguns países pobres têm peso insuficiente. (weight)

6.   Ele saiu ileso. (harm)

7.   O aluno foi dispensado. (miss)

8.   O filme foi uma grande desilusão. (appoint)

9.   Estas batatas estão ainda cruas. (cook)

10.   É muito mal-educada. (polite)

11.   Não é prático. (practical)

12.   Essas pessoas não são desejadas. (wanted)

13.   É uma pessoa antipática. (kind)

14.   São pessoas pouco simpáticas. (friendly)

15.   Fui mal interpretada. (interpret)

16.   Pronunciaste mal as palavras. (pronounce)

Exercise 2. Now choose words from the table and write sentences.

c. Language exercise explanation

The Portuguese definition of prefixes is very similar to the English one. In both languages it is basically about adding an affix before a root word. Many of the prefixes are similar especially those from Greek and Latin origin (*-re* from Latin and *-anti* from Greek), but there are those that are visually different (*-over* in English and *-sobre* in Portuguese) but with the same meaning (both *-over* and *-sobre* mean excess). There are also those that are used in one language but not in the other language (the prefix *-mis*, of German origin, is used in English but not in Portuguese). The concept of word formation is not a difficulty for the Portuguese student since the idea is identical in both languages. However, confusions begin with which prefix is to be used.

This section explains where these differences lie. It is based on the English model exercise. Therefore it is simplified, roughly outlined and narrowed down to the relevant exercise. The explanation begins with the most similar prefix situations and therefore the simplest for the Portuguese student to learn and apply. Each item thereafter exemplifies a gradual complexity in word formation with prefixes in both languages.

We will initiate this part with word formation plus prefix combinations that are similar in both languages. Three of them are described hereunder.

There are word formation + prefixes "parallel" between English and Portuguese as they have visually identical prefixes and the same meaning when the prefix is added to the root words. There are many examples of those with the prefix *-re*: *redo* in Portuguese is *refazer*. Other examples include some words that take the prefix in English *-dis* (in Portuguese there is the prefix *-dis/-des*, both of Latin origin and identical meaning) as in *disappear* and in Portuguese is *desaparecer*, the prefix *-im* as in the word *impatient* which in Portuguese is *impaciente*, the prefix *-in* as in the word *invisible* and in Portuguese is *invisível*, the prefix *-ex* as in *ex-husband* which is *ex-marido* in Portuguese, and the prefix *-sub* as in *submarine* which in Portuguese is *submarino*.

There are word formation combinations + prefixes which are similar but not identical. The prefixes *-il* and *-ir* in English, for example, have comparable prefixes in Portuguese, but in Portuguese there exists the prefix *-i* (or *ir*). The English word *illegal* in Portuguese is *ilegal* and the English word *irresponsible* is *irresponsável* in Portuguese. Another comparable word formation combination plus a prefix includes the prefix *-post*, which is *-pós* in Portuguese. The word *post-graduation* is *pós-graduação*. Because of the likeness of the aforementioned word formation combinations concerning prefix and/or meaning, they are not too complicated for the Portuguese student.

Other prefixes are present in both languages with the same meanings but do not look alike at all. These include *-over* and *-under*. In English you have *overload* and in Portuguese there is *sobrecarga*. The prefix *-sobre* has the same meaning of the prefix *-over* but looks nothing alike. The word *underestimate* is translated as *subestimar*. The prefix *-under* has the same meaning of the prefix *-sub* but looks differently.

The following examples of word formation taking a prefix have very few resemblances concerning prefix and overall meaning. Taken as a whole, there are six language description breakdowns explaining these.

The prefix used in English is not always the same one used in Portuguese even if both exist in the two languages. For example, the prefixes *-in* and *-dis* are present in Portuguese and English. However, when one of these prefixes is used in one of the languages, another prefix might be applied. Examples are the English word *inhuman*, which is *deshumano* in Portuguese, the English word *unimaginable* in Portuguese is *inimaginável*, the English word *unwanted* in Portuguese can be *indesejado* and the Portuguese equivalent for the English word *unreal* is *irreal*. So it is understandable when the Portuguese student of English says *dishuman* (or *deshuman*) instead of *inhuman*, or *inimaginable* rather than *unimaginable*. All of these prefixes exist in both languages except for the prefix *-un*, which is only present in English.

Another situation has to do with the prefixes *-un* and *-mis* that do not exist in Portuguese. The word *unusual* could be translated as *invulgar* or by adding the negation to the root word as in *não usual*. The word *usual* exists in Portuguese and has the same meaning as the English word *usual*, but in Portuguese does not take a prefix. To express *unusual* using the Portuguese word *usual* would be *não usual*. The prefix *-mis* does not exist in Portuguese, either. The words *misinform* and *misinterpret*, for example, would be translated as *informar mal* and *interpretar mal*, respectively.

The problem with these variances is that students will do a lot of different combinations since they do not realize which word formation situations are different and which are similar in both languages. The word *impatient* might become *unpatient* even though the Portuguese translation is very similar – *impaciente*.

Another difference is when the Portuguese and English words take the same or similar looking prefixes but the meanings of these words are theoretically similar but dissimilar in practice. The word *dislike* in English means to not like something or someone. The Portuguese word *desgostar* (*des + gostar*) is first translated as displeasure or dissatisfaction. Um *desgosto de amor* means displeasure with a love relationship. However, the Portuguese word *desgostar* also means to not like. In English it is common to say, "I dislike something", while in Portuguese

it is not customary to say "Eu desgosto …". Instead, the negation form is used as in "*Eu não gosto*".

Another example taken from the sample exercise is the word *disrespect*. In Portuguese the word *desrespeito* exists and has the same meaning, but in practice the phrase "They disrespected me" might more commonly be translated as "*Eles faltaram-me ao respeito*" instead of "*Eles desrespeitaram-me*". Other examples include the word *illogical* translated to Portuguese as *ilógico*, but normally what is said is "*não é lógico*". The sentence: "They are unlike each other" would probably be translated as "*Sao diferentes*" or "*Não são semelhantes*" instead of using the Portuguese word combination *semelhante* + prefix *-dis* as in "*São dessemelhantes/dissemelhantes*".

Like in every language, the Portuguese speaker expresses certain ideas differently than in English. What we have are "seemingly" English fixed expressions to the Portuguese speaker, although they are not in fact considered fixed expressions. The statement: "They are unlike each other" might seem strange to the Portuguese learner of English since to express this idea in Portuguese, she/he would say: "*Não são iguais*" rather than "*São dessemelhantes/dissemelhantes*". So getting the student to begin to use the word in this context can sometimes turn out to be a forced situation. If the instructor gets the student to accept these word formation combinations as a kind of "fixed expression", a translation method can safely be applied to get the student to compare and contrast these different ways of expressing ideas in the two languages. Learners of English often accept and apply idiomatic expressions, for example, correctly and unquestionably, since these are understood as fixed expressions.

Finally, there are many words that take prefixes in English, but do not have an equivalent word in Portuguese. In other words, the word simply does not exist in Portuguese. The word *underweight* can be translated as *debaixo do peso*, the word *overcharge* could be translated to *levar dinheiro a mais* and the word *uncooked* as *por cozinhar* or *cru*, the latter meaning raw.

The word formation plus prefix was separated into nine groups (3 simple ones and 6 more complex items). And of course, there are others that may not totally fit into these groups and can be considered loose ends, or others that are part of a group but are slightly different.

If we return to the initial exercise plan at the beginning of the English exercise sample, one of the aims is to revise already learnt language. Translation exercises requiring conversion from the native language to the non-native one are considered to be one of the most difficult kinds of language exercises since to do these, students need to have had a fair amount of language input so that at least the second language is recognizable. At the same time, they are not repetitive type of revision exercises such as the ones students have done repeatedly in secondary school. And although students may think they know the language (since language training has taken up at least 7 years of their academic background), a somewhat advanced level exercise can remind them that they do indeed need to revise and, more importantly, practice to be able to apply it in language production.

Another aim included was to deepen knowledge of word formation. This method obviously is one of the most adequate exercises to dismember word formation and thereby deepening ones knowledge. Comparison and contrast between both languages is both embedded and unambiguous as these are seen and analyzed side by side.

Another aim mentioned is to break bad habits. If students have spoken out the incorrect English word *dishuman* (from the Portuguese word *deshumano*) rather than the correct English word *inhuman*, for, let us imagine, at least 3 of the 7 years or more during language training at high school, it has obviously become part of their English communication baggage and is used over and over again. Repetition leads to habit forming and possibly results in fossilization. Again, a comparison-contrast exercise that is challenging and different from those done in high school may at least help to break bad habits. Hence the methodology adopted for this exercise can be justified by factors that have led students to make the same mistakes time after time.

D. ECS German language subject

1. *Students' language background training and the German language subject*

Due to the secondary school curricula in Portugal, ECS students usually do not have the chance to study German and consequently do not have any related background training and preparation. ECS students start at beginner's level, and in two years they are supposed to reach a B1 level. Since the aim of their language studies is to be able to follow classes at a German University, they need to acquire general survival German and some German for Academic Purposes in the specific area of Computer Science.

German is going to be generally their third foreign language, having started with English and then learned either French or Spanish as second foreign languages. This means that students beginning to learn another foreign language have already gained experience. In learning, understanding and using a new language, they know they can actively resort to languages previously learned. If the language to be learned is in a certain way similar, they are in the same language family. Most new foreign words are English loan words, but like English the language also contains a lot of foreign words with Greek or Latin roots which are not often recognized as "foreign" any more. (There are lots of similar words in German and English as for example: *Apfel – apple* or *Tiger – tiger*). This recourse can be helpful and should be taken in account. Previous foreign language learning experiences should not be ignored or left unexploited.

If possible, vocabulary or grammatical structures can be compared and contrasted, especially in beginner's classes. The idea that intelligent guessing is worth a try before looking up a word in the dictionary gives students confidence and they realize that they have to learn much difficult German grammar before being able to understand something.

"Der Mann kann gut schwimmen." This sentence could be pre-translated as: "*The man can swim good."* and is not far from the correct translation: *"The man can swim well."*

2. *Using translation in the German language classroom*

When learning German, the use of translation can be an important means of stressing differences between languages and clarifying uncommon grammar structures to the learner. An example one can name is the problematic word order in the German language. Word order is an element of syntax. German syntax is more flexible than English syntax and depends more on case (Nominative, Dative, and Accusative) and case endings for clarity. In German, the subject may not always come first in a sentence. In subordinate (dependent) clauses, the conjugated verb must be at the end of the clause. It is only natural that students think in their mother tongue when they begin to learn German. But the number one mistake is thinking too literally and translating word-for-word.

To make the peculiarity of the German word order clear, both languages (German and English and even Portuguese) can be compared in contrast and even a word-to-word translation can be carried out to stress the differences between languages:

Ich muss morgen um 8 Uhr nach Lissabon fahren. (German)

I must go _____ to Lisbon. (English)

Eu tenho que _____ a Lisboa. (Portuguese)

Then one can explain to students: "Look, the crazy Germans say: I must _____ to Lisbon go" (or in Portuguese "Eu tenho que _____ a Lisboa ir".) and any time the mistake occurs one can say: "Remember what those crazy people say?!?"

This word-for-word translation has shown to be of great help, and a more effective memo technique than the visual support.

1	2 1st part of the verb	3	4	5 2nd part of the verb
Der Zug	Kommt	aus München	um 8 Uhr	an.
Aus München	Kommt	der Zug	um 8 Uhr	an.
Um 8 Uhr	Kommt	der Zug	aus München	an.

There are many other things that make German "hard", but the "hard" aspects can be skipped at this level because grammar points are less essential for communication and can be dealt with later for perfection. This way energy should be focused on the right things at the right time encouraging students to speak and read, to use as much of the language as possible, even to make mistakes and point out which ones are less serious mistakes as students will not be advanced speakers of German in this short learning period. This language course is aimed at beginner to intermediate learners who are struggling with basic grammar and vocabulary.

Introductory German taught in the students own language can be very helpful. Analytically oriented learners often favor translation as an aid to learning. Coincidently this happens to be a common trait amongst engineering students. Most of their studies are analytically oriented.

Translation is also a real life communicative activity. Students translate in class for peers, and translate instinctively into an interim usually uncontrolled by the instructor since it is part of their means of acquiring a language. Being exposed to it in one's own language and learning the basic grammar before getting immersed in its complexity will make the overall experience a little less demanding.

Although some technical terminology related to computer science is presented, the main focus is on survival German and getting students to ideally reach B1 level. It would be

unrealistic to focus too much on technical terminology because most Portuguese students have not had any prior German language training. So it is a mishmash of general, academic and survival German language learning.

E. ECS French language subject

In Europe, French is an official language in Belgium, France, Luxembourg and Switzerland. The European Computer Science course includes France in its protocol. Every year these students choose to go to either Blois or Metz to do their final year and in these universities the teaching language is French.

1. *Students' language background training and the French language subject*

Most high school graduates have had at least 3 years of French instruction. Many of the students who choose French over German, though, have either lived in France as Portuguese emigrants or consider the French language easier than German because it is a Latin language like Portuguese.

Students' beginning language levels start at A1 and move up progressively to B1 levels. Workloads are the same as for German: 4 contact hours per week for 2 years. It is therefore not an unrealistic goal to take students to B1 levels.

The focus of language training is on academic, general and survival French, but also on technical French. Contrary to English, technical terms in French are part of the subject syllabus. Translation approach is used to present these terms to students.

Like in Portugal, in France there are also a substantial number of English words written in programming due to the presence of program instructions in French texts. Unlike Portugal, though, the highly specialized computer terms are confined to professional circles and not to the general public. Most technical terms in computer science in France have a French translation.

Governments have set up public agencies to make recommendations to the general public and professionals about terminology in general offering French translations of new words from English (see General Commission of Terminology and Neology Order Line No. 96-602 of 3 July 1996 on the enrichment of the French language). Computer terminology is no exception. It includes, in particular, terms related to concepts, techniques, standards, products, software and hardware, as well as practical applications and business computing.

Therefore, students who are going to study computer science in a French university must know the technical terms related to their technological subject in French. This is why computer science technical terms are given special attention in the French language subject. However, often terms are translated from English into French, rather than from Portuguese into French since Portuguese students are often more familiar with English computer science terms than the Portuguese ones.

2. *Using translation tools to teach technical language in the French language classroom*
Given this stance, students choosing the French language will have a mix of general, academic and technical French for computer science purposes. The aim is B1 level and the technical terms using a translation approach are illustrated in the following part.

3. *French exercise sample*

a. Language exercise plan

Language goals: To familiarize students with technical terms in the area of Computer Science.

Language focus: Technical language vocabulary

Language teaching methodology: Translation from L2/L1 English/Portuguese into L2/L3 (Second or third language)

b. French exercise sample

English term / Termo em português		Terme technique français
Hardware	-----	Hadware
Website	-----	Site Web
Megabytes	-----	Méga octet
Email	-----	Mél, Courriel
Download	Descarregar	Téléchargement
Upload	------	Transfert Montant
Computer	Computador	Ordinateur
Software	------	Logiciel

c. Explanation

We chose the abovementioned terms because they look nothing like the English or even the Portuguese versions. For example, the French term for *logiciel* (meaning software) looks nothing like the word software.

The sample exercise list above is not extensive since teaching vocabulary in list-form should not be exhaustive but provided in small doses. However, it does give us an idea of how different the technical terms are. Furthermore, it says something about the French culture, in that they attempt to preserve their national identity. Portuguese, on the other hand, may be more flexible to foreign imports. Then again, while French versions of technological-related vocabulary are available to French scholars and to the general public, in Portugal this is not the case.

IV. Final Remarks

Proficiency of at least three languages in today's global world is not an unreal or unreasonable goal for our future professionals. This research work has focused on future computer science

engineers who intend on working and living abroad. In order for these professionals to be able to succeed with confidence, they should be prepared to deal with cultural, educational, social and ethnic diversity.

As language teachers in a transnational university course in Portugal, we have the responsibility to help prepare our students for the cultural and linguistic heterogeneity that awaits them. This paper has aimed at showing how we attempt to accomplish this goal. We first need to understand where our students are coming from. We are interested in knowing their language backgrounds and current knowledge. In addition, it is crucial to know the reality that surrounds these individuals, both linguistically and culturally. The few examples in this paper pointed out that the Portuguese students have two mandatory languages in secondary school, which are usually 7 years of English and 3 years of French. We then need to know where they are going.

Once we are informed of the past and future, we commit ourselves in doing the best we can to give them the training they need to thrive. We hope that the examples illustrated in the paper show how important multilingualism and multiculturalism are for our future professionals in technological domains. Teaching approaches that involve comparing and contrasting languages and cultures are obviously an ideal option. The example we illustrated in this paper is the method of translation in the language classroom. In order to help our students succeed, we could set an example by applying multilingualism in classes, thus showing them that, as world citizens, we must all become part of this very multi-faceted global world.

Works Cited

Dilkova, Ts. "Learning Strategies in Foreign Language Teaching: Using Translation in English Language Teaching." *Journal of the University of Chemical Technology and Metallurgy* 45 (2010): 449-52.

Gwang-Jo Kim. "Language, Education and the Millennium Development Goals." Opening ceremony at International conference, Bangkok, Thailand. 2010. UNESCO org. Web. 1 Dec. 2013. <http://www.unescobkk.org/news/article/unesco-co-organized-conference-stresses-the-importance-of-mother-tongue-language/>

Leonardi, Vanessa. "Teaching Business English through Translation." *Journal of Language & Translation* (2009): 130-53.

Liao, Posen. "EFL Learners' Beliefs about and Strategy Use of Translation in English Learning." *Regional Language Centre Journal* 37 (2006): 191-215.

Macaro, E. *Teaching and Learning a Second Language: A Review of Recent Research*. London, New York: Continuum, 2003.

Machida, Sayuki. "A Step Forward to Using Translation to Teach a Foreign/Second Language." *Electronic Journal of Foreign Language Teaching* 5 (2008): 140-55. Web. 1 Dec. 2013. <http://e-flt.nus.edu.sg/v5sp12008/machida.pdf>

Pereira, C., F. Barbosa, H. Guincho, F. B. Leite and J. L. Nunes. "European Computer Science Master Curriculum Development Methodology: Management and Research." ICEUTE Conference, Salamanca. NWeSP. 2011. 487-92.

Simões, Deolinda, and Helga Guincho. "Crossing Borders: Using Translation Techniques in Improving Portuguese European Computer Science Course Students' Language Proficiency." ICEUTE Conference, Salamanca. NWeSP. 2011. 458-63.