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Engineering students' instrumental motivation and positive attitude towards learning English in a trilingual tertiary setting

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Abstract

This exploratory small-scale study focuses on the attitude towards learning English and levels of motivation of 132 engineering students from the University of the Basque Country (Spain). The extent to which they consider themselves competent in three languages (Basque/Spanish/English) is also evaluated. For assessing these variables, a 35-item questionnaire is used. The participants were taking an ESP (English for Specific Purposes) course and were familiar with English as a vehicular language through CLIL (Content and Language Integrated Learning) and/or EMI (English Medium Instruction) courses. The results demonstrate that their attitude is positive, and it has improved since 2003, despite certain historical events concerning the minority language (Basque). With regard to motivation, the students show a high level of instrumental orientation but a low level of extrinsic-integrative motivation. Relatively high levels of intrinsic motivation are also observed, not far from extrinsic-instrumental motivation levels. The students' mother tongue (Basque vs. Spanish vs. Basque/Spanish) does not affect results significantly. Finally, high levels of self-perceived confidence with respect to their command of English are observed.

Keywords: trilingual education; attitude; motivation; engineering students; Basque Country.

Resumen

Motivación instrumental y actitud positiva respecto al aprendizaje del inglés de estudiantes de ingeniería en un entorno terciario trilingüe

Este estudio exploratorio a pequeña escala se centra en la actitud hacia el aprendizaje del inglés y los niveles de motivación de 132 estudiantes de

ingeniería de la Universidad del País Vasco-Euskal Herriko Unibertsitatea (España). También se evalúa el grado en el que ellos se consideran competentes en tres idiomas (Euskera/Español/Inglés). Para valorar estas variables, se usa un cuestionario de 35 puntos. Los participantes estaban recibiendo un curso de IFE (Inglés para Fines Específicos) y estaban familiarizados con el inglés como lengua vehicular a través de cursos de Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE) y/o Inglés como Medio de Instrucción. Los resultados demuestran que su actitud es positiva y que ha mejorado desde 2003, a pesar de ciertos hechos históricos relacionados con la lengua minoritaria (Euskera). Con respecto a la motivación, los estudiantes muestran un alto nivel de orientación instrumental pero un bajo nivel de motivación extrínseca-integrativa. También se observan niveles relativamente altos de motivación intrínseca, no muy alejados de los niveles de motivación extrínseca-instrumental. La lengua materna de los estudiantes (Euskera vs. Español vs. Euskera/Español) no afecta a los resultados de forma significativa. Finalmente, se observan altos niveles de confianza auto percibida con respecto a su dominio del inglés.

Palabras clave: educación trilingüe, actitud, motivación, estudiantes de ingeniería, País Vasco.

1. Introduction

Language learning attitude and motivation are some of the key abstract affective variables of language learning (Bernaus & Gardner, 2008). Considerable research has demonstrated that attitude and motivation to learn another language are related to each other (Lasagabaster, 2005; Elyildirim & Ashton-Hay, 2006; Kormos, 2008; Gardner, 2010). According to certain researchers (e.g. Dörnyei & Ushioda, 2011), learners having a good language motivation and a positive attitude towards an L2 or L3 can learn it more successfully. Other affective and non-affective variables such as anxiety and aptitude are also involved in language learning, but this paper will focus primarily on motivation and attitude towards English as a third language in a trilingual formal setting.

Motivation for language learners is said to be the psychological quality that leads them to achieve the goal of mastering that language, whereas language attitude is related to a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour (Eagly &

Chaiken, 2007). Researchers in many parts of the world have found that motivation is a consistently strong predictor of successful language learning and that their correlation is largely positive (Masgoret & Gardner, 2003). However, several research studies carried out in different contexts have demonstrated that the strength of motivation to learn a language varies from language to language or with age (Lasagabaster et al., 2014), this leading to individual variations over time. In these studies, the oldest learners' positive attitudes and motivation are less intense than those of the youngest ones, when learning takes place in formal school settings.

Different names have been coined to describe different types of motivation. The distinction between integrative and instrumental motivation (Gardner & Lambert, 1972) continues to be valid, but other categorizations, such as intrinsic versus extrinsic motivation, are also commonly used (Ryan & Deci, 2000). On the one hand, integrative motivation has classically represented attitudes and feelings towards the target language group and/or the desire to be integrated into the culture of that language group. However, a more modern approach to this variable (Gardner, 2010) indicates that to describe an individual as being integratively motivated to learn a language, first of all, s/he will have to be highly motivated to learn it; secondly, s/he will have an open and accepting approach to the new cultural group and/or a strong emotional interest in the speakers of that language and, thirdly, s/he will have a positive evaluation of the learning situation. On the other hand, instrumental motivation refers to the pragmatic or potential utilitarian gains of L2/L3 proficiency, such as getting a better job or a higher salary or learning the language as an instrument to achieve practical goals such as reading technical material, translation work or achieving higher social status.

The distinction between intrinsic and extrinsic motivation is also used but their definitions have always been controversial (Sansone & Marackiewicz, 2000). We define "intrinsic motivation" as motivation to engage in an activity for its own sake or because the individual has the desire to perform a specific task in the target language, due to the perceived intrinsic value and enjoyment derived from the activity, while "extrinsic motivation" is motivation to engage in an activity as a means to an end. Schmidt et al. (1996) defined extrinsic motivation as motivation to obtain an external reward and intrinsic motivation as motivation to get sufficient rewards from the activity itself. They stated that intrinsic-extrinsic distinction is similar to integrative-instrumental distinction, but not identical. According to them and other researchers, e.g. Brown (2000), both instrumental and integrative

motivation can be seen as subtypes of extrinsic motivation, because both are related to goals and outcomes. However, a paradigm shift seems to be taking place since, according to Dörnyei and Ushioda (2011: 7) “for L2 motivation research [...] in the 21st century talking about integrative or instrumental orientations has a rather historical feel about it”.

The definition of the other affective variable this paper focuses on, language learning attitude, is somewhat more controversial than that of motivation. It can be described as a hypothetical construct used to explain the direction and persistence of human behaviour (Baker, 1993), or the feelings people have about their own language or the languages of others (Crystal, 1997), or the set of beliefs that the learners hold towards the members of the target language group, the target language culture and, in the case of classroom learning, towards their teachers (Hashwani, 2008). The following definition has been used in this study: “language attitude is the set of feelings our students express towards English or towards speakers of this language, taking into account that English is one out of the three languages they use for academic purposes”.

The components of attitude are said to be three. The first one, the behavioural aspect of attitude, deals with the way one behaves in a particular situation. When the learners identify themselves with the native speakers of that language and adopt aspects of behaviour which characterize the members of the target language community, they will strive to learn more in the sense of acquiring information and skills useful for daily life and engaging themselves emotionally (Kara, 2009). The second one, the cognitive aspect of attitude in the process of language learning, involves the connection between previous knowledge and the new one, creating new knowledge, checking new knowledge, and applying the new knowledge in different situations. Finally, the emotional aspect of attitude (Feng & Chen, 2009) refers to the surrounding situations the learners may like or dislike and the inner feelings and emotions of foreign language learners influence their perspectives and their attitude towards the target language.

We understand that learners with a positive attitude will be (highly) motivated in language learning and this will influence their performance in acquiring the target language. The present investigation has been conducted to extend our knowledge of language education in the Basque Country, where English shares academic goals with Basque, a minority language, and Spanish, another international language. The study was

undertaken to reach a better understanding of how the regular use of English in an academic community with two official languages may be affected in terms of motivation and language attitude. Incidentally, the latter was measured in 2003 (same location and questionnaire with similar students) so its comparison with data from 2013 will undoubtedly enrich our outcomes.

2. Trilingualism and the Basque Country

During General Franco's regime in Spain (1939-1975), a "Spanish only" policy was instituted and Basque communities were repressed. Basque was banned from the public domain for four decades (the ban was lifted in 1979) until it was recognized as an official language by law in the Basque Autonomous Community in 1982. Since the Statute of Autonomy for the Basque Country was enacted in 1979, the Basque parliament is vested with powers over a broad variety of areas, including tax collection. However, after more than 35 years since the Statute was accepted by the lower house of the Spanish Parliament and the Spanish Senate, 35 areas have not been transferred yet. These fairly recent facts and events may be crucial for understanding some Basque citizens' attitudes towards "foreign languages" (Spanish included).

The revitalization of the Basque language has been very successful in the educational system (González Ardeo, 2014) and the system has rapidly evolved since its official launch in 1983. Many students are brought up speaking Basque and Spanish, so they have two native languages. Consequently, they can be considered bilingual if we just focus on their natural acquisition process regarding those languages. However, they may or may not be balanced bilinguals. By contrast, L2 is the language these students speak (English) other than their L1 (Basque and/or Spanish).

The rapid evolution of Basque has seen more or less simultaneously the early introduction of English, both as a school subject and as a school language. A trilingual model, Basque-Spanish-English, was officially introduced by the Basque Government in 2010. However, many private schools had been involved in this approach for several years before this date and the University of the Basque Country had launched its "Trilingualism Plan" in 2005. In this paper, the term trilingual means: "able to use three languages actively with fairly similar fluency".

Another fact that has heavily influenced the linguistic strategy in the Basque Country is the Bologna Process. One of its consequences is the fact that many universities in Europe are trying hard to internationalize their curricula (Björkman, 2011; González Ardeo, 2013). The number of undergraduate and postgraduate programs taught entirely in English increases every year (Costa & Coleman, 2010) not only in Northern Europe but also, although at a slower rate, in Southern Europe. The University of the Basque Country is deeply involved in this process and, currently, fairly widespread approaches such as CLIL (Content and Language Integrated Learning) and ESP (English for Specific Purposes), and to a much lesser extent EMI (English Medium Instruction), play important roles as facilitators of language acquisition.

Although EMI courses are on the rise in Europe, mainly in Masters Programmes, the integration of EMI into an institution involves a number of challenges from the point of view of language proficiency of students and teachers. One of the risks is that the lecturer's English, although good, may not be specialised enough. Further issues may involve the difficulty of assessing examination answers (what is being tested, the English language, knowledge of the subject, a combination of both?).

CLIL is reserved for those programmes that have explicit and integrating content and language aims (Coyle et al., 2010; Smit & Dafouz, 2012), in contrast to EMI which focuses on content learning only. Coyle (2007: 546) explains that “the literature differentiates between language-led CLIL, which highlights language development, and subject-led CLIL, which excludes explicit language teaching”. The strength of CLIL focuses on integrating content and language learning in varied, dynamic and relevant learning environments. Its potential weakness lies in the interpretation of this “flexibility” unless it is embedded in a robust contextualized framework with clear aims and projected outcomes.

Within the University of the Basque Country, serious efforts are made in order to implement these two approaches but when EMI is implemented, as often as not, certain problems arise. Firstly, there is usually a gap between the skills acquired through general language courses and the English language skills needed. Secondly, this approach expects students to possess higher English levels (e.g. C1 level - Effective Operational Proficiency). Thirdly, concern about the linguistic skills of subject teachers is usually perceived.

The growth of tertiary CLIL is an institutional initiative for enhancing the

employability of home students while attracting international students. However, despite these words, we must be cautious and keep in mind, as Coyle et al. (2010: 25) state, that “the position of CLIL is clearly at an exploratory stage in higher education in many countries”, the Basque Country included.

Finally, ESP is designed to meet specific needs; it is related in content to particular disciplines, occupations and activities; it is centred on language (lexis, syntax, discourse, pragmatics) appropriate to activities; it is non-General English oriented and it has no pre-ordained methodology (discipline, strategy or need dependent) (Bell, 2006). The ESP practitioners should regard themselves and their students as professionals who learn and complement each other. The facts in the University of the Basque Country for the last 30 years certainly fit these words.

Research carried out in the Basque Country confirms that secondary school students enrolled in EMI or subject-led CLIL classes (Lasagabaster & Sierra, 2009) and engineering students enrolled in ESP classes (González Ardeo, 2003) hold significantly more positive attitudes towards English as a foreign language with regard to teaching content than those in EFL classes. Moreover, one of the most powerful findings of CLIL and ESP groups centres on increased motivation in both learners and teachers. Nevertheless, it is widely recognized that there is a strong need for research and better practices in tertiary CLIL settings (Costa & Coleman, 2010). As far as ESP is concerned, a paradigm shift has taken place in the University of the Basque Country and, currently, engineering students often face the dilemma of choosing subject-led CLIL vs ESP courses without being aware of their compatibility (González Ardeo, 2013).

The following sections include an exploratory small-scale study to determine how and to what extent, if any, the peculiarities of the trilingual approach in our university affect motivation and attitude towards learning English.

3. Research questions and hypotheses

For the following questions and hypotheses to be developed, we have considered the background and historical perspective depicted within the previous two sections and the fact that the University of the Basque Country advances towards a multicultural community based on three pivotal languages (Basque, Spanish and English). Moreover, considering that the

linguistic question is still a controversial issue in the Basque Country and that English has become *de facto* an important vehicular language for engineering students, these are the questions that this study will address:

1. Is the L1 in the Basque Country (Basque vs Spanish vs Basque/Spanish) linked to different attitudes towards learning English? The question involves potential cultural resistance to the target language as a consequence of the influence of historical events upon the minority language, Basque. By considering recent research on the topic with secondary school students, we address the following hypothesis: the participants will show a positive attitude towards learning English via CLIL, ESP or EMI, irrespective of their L1.
2. Is students' motivation to learn English in a tertiary setting a balanced combination of extrinsic and intrinsic motivation? Since the participants are well aware of how important English will be in their careers, we hypothesise that they will show almost exclusively extrinsic motivation, with a high level of instrumental motivation and a very low level of integrative motivation.
3. Does being instructed in English at this stage enhance their feelings of having competence in three languages? Despite the fact that their self-perceived competence in speaking and writing in English will be high, the hypothesis we address is that they will not consider themselves as (balanced) trilingual subjects. Balanced bilingual individuals (Basque/Spanish - B/S) are relatively common within the Basque Country, but balanced trilingual ones (Basque/Spanish/English - B/S/E) are a lot less frequent.

4. Methodology

4.1. Participants

Our sample was taken from the Faculty of Engineering located in Bilbao (Spain) and the study involves 132 students (113 senior engineering students taking courses for grade credit, plus 19 students enrolled in a Master's degree). Their age range was 21 to 29 [mean (μ) = 23.39, standard deviation (SD) = 8.46]. As for gender, the proportion of male/female students was 81/51. The students' L1 was Basque (28.78% of the sample), Spanish

(43.18%) or both Basque and Spanish (28.03%). The participants had the following characteristics in common: 1) they were taking an optional ESP course (delivered by the author of this paper); 2) they were following simultaneously (or had followed) optional CLIL and/or EMI courses; 3) English is their L2 or L3. Apart from this, we all know that fully homogeneous classes do not exist and the older the learners are, the more different their backgrounds are. Our students have different strengths and weaknesses, but they are motivated learners with a good command of English [from (upper) intermediate to advanced level].

Finally, a key question to be considered in order to contextualize the sociolinguistic reality which justifies the study is the fact that our students' parents chose one particular language model in their children's pre-university education¹. This, and the historical events previously mentioned, may or may not have affected their motivation and attitude towards English (as a foreign language).

4.2. Instruments

The students were invited to complete a questionnaire (see Appendix) assessing mainly their attitude and motivation in relation to learning English. The number of items, 35, was decided not only thinking of the solid results the instrument should yield, but also trying to minimize the risk of respondents suffering from fatigue when filling out the questionnaire. Thus, the instrument can be described as short enough (manageable), easy to use, and easy to grade.

Firstly, the questionnaire required students to provide some demographic and/or socio-biographical information (age, gender, L1). Secondly, it included several items connected to attitude indicators and key motivators, as well as a section on "Self-Rating of proficiency in English". The questionnaire was exclusively administered in English and a 4-point Likert scale was used for grading purposes (strongly agree = 4, agree = 3, disagree = 2, strongly disagree = 1). Its sections were the following:

- (i) Attitude towards learning English. The main aim of the ten items from this first section was to gather information about attitude towards English in a trilingual formal setting in which Basque has to struggle for survival, and Spanish is still a common vehicular language. The same items had been successfully used before by

González Ardeo (2003) and by Lasagabaster (2001). The latter adapted Baker's (1993) questionnaire on the topic to the particular context of the Basque Country.

- (ii) Intrinsic and extrinsic (integrative-instrumental) motivation. The different scenarios usually contemplated (Schmidt et al., 1996) are a combination of different levels of intrinsic and extrinsic motivation, the latter being divided into the dichotomy integrative vs instrumental, as Brown (2000) does. In order to quantify this diversity of options in our study, twenty items have been included in this section of the questionnaire, divided into different subsections. The first five items try to detect the level of intrinsic motivation our students show, and the following five try to see to what extent the students have integrative feelings. Finally, ten new items try to check the levels of instrumental motivation of these students, both with respect to General English (GE) courses (5 items) and CLIL/ESP/EMI courses (5 items).
- (iii) Self-rating of proficiency in English. Student responses to the five items included in this section basically expect to show how confident they feel with their level of English and, consequently, if they have the feeling of being trilingual (B/S/E), based on self-perceived competence in these languages.

4.3. Data collection

The questionnaires were completed in class (≤ 20 minutes) and the answers were recorded on answer sheets. They were also codified and statistically analysed by means of the following statistical analysis and data management solution: *SPSS Statistics*.

5. Results

With the help of the *SPSS* software, descriptive (μ and SD for each item are included) and inferential statistics were ascertained. For the latter to be obtained, analyses of variance, ANOVA and factor analysis were carried out. These analyses were also used to test the differences between our subgroups of students with respect to their L1 (B vs S vs B/S). Exploratory factor

analyses were also carried out to identify the amount of variance explained by each factor, and analyses to evaluate the questionnaire's reliability and validity were accomplished. Internal consistency was measured through Cronbach's Alpha.

The results from the first section in the questionnaire reflect a very favourable overall attitude towards learning English. Table 1 compares the results from 2003 and 2013 in terms of μ s and SDs. This is the only section of the questionnaire in which this kind of comparison has been carried out since, as we mentioned in the introduction, data from 2003 were readily available (see González Ardeo, 2013).

Attitude towards learning English		
Items	μ /SD (2003) N=123	μ /SD (2013) N=132
1. hear	3.044/1.198	3.122/0.987
2. pupils	3.065/0.938	2.867/1.289
3. speak	2.996/1.211	2.906/1.476
4. difficult	2.424/0.787	2.717/1.109
5. useful	1.847/1.356	1.969/1.628
6. taught	2.243/0.989	2.603/1.278
7. enrich	3.486/1.068	3.579/0.883
8. marry	2.182/1.003	2.897/1.238
9. worth	3.819/0.573	3.872/0.693
10. children	3.190/1.098	3.208/1.308

Table 1. Mean (μ) and SD scores of items (see Appendix) from "Attitude towards learning English" in 2003 and 2013.

The most relevant considerations when comparing these results can be summarized as follows: 1) all the items but two (2 and 3) have improved their μ scores; 2) current μ scores for items 2 and 3 are very close to those obtained in 2003 (no statistically significant differences); 3) in most cases, the differences are not high but some cases are well worth mentioning (scores in 6 and 8 have changed significantly from "reluctant" to "openly in favour of" being taught in English and not minding "marrying an English speaker"; 4) the differences in μ values for items 1, 3, 7, 9 and 10 are very narrow; 5) SD values have increased somewhat in most cases (all but 1 and 7), so dispersion has increased.

Since the variables do not overcome normality tests, ten non-parametric Wilcoxon-Mann-Whitney tests were carried out in order to compare mean values from 2003 and 2013. As expected, a statistically significant increase of mean values was observed for item 6 "taught" (p -value=0.0078) and for item 8 "marry" (p -value=0.0005). No statistically significant differences were

observed in the scores of the remaining items within the same period of time. Cronbach's Alpha ($\alpha=0.681$) predicts that the internal consistency is acceptable since although values between 0.7 and 0.8 are usually needed for confirming internal consistency, in some fields of study (e.g. psychology) values above 0.6 are commonly accepted. Finally, considering results in terms of L1 (B vs S vs B/S), no statistically significant differences were observed either.

Our second section contains four groups of items to study these engineering students' motivation(s) (N=132). This psychological quality is the cornerstone of this section. Subsections of intrinsic and extrinsic (integrative/instrumental) motivation are included. Table 2 shows the results of different types of motivation.

1 μ /SD	2 μ /SD	3 μ /SD	4 μ /SD	5 μ /SD
Intrinsic				
2.934/0.893	2.895/1.006	3.542/0.953	2.386/1.490	3.792/0.687
Integrative				
2.078/1.638	2.809/1.135	3.067/1.089	2.294/1.568	3.298/1.173
Instrumental (GE)				
3.603/0.627	3.403/0.718	3.393/0.909	2.256/1.008	3.312/0.898
Instrumental (CLIL/ESP/EMI)				
2.239/1.227	3.6535/0.737	2.621/1.013	3.519/0.817	3.328/0.692

Table 2. Overall mean (μ) and standard deviation (SD) scores for motivation items (1 to 5) (see Appendix).

These results show relatively high levels of intrinsic motivation. However, μ values for items 1, 2 and 4 are far less high than for 3 and 5. Item 4 "I learn English simply for the sake of learning it" presents the lowest μ . As far as SDs are concerned, they remain relatively low except for item 4 again. Data was also evaluated considering the students' L1 (B vs S vs B/S). The differences observed were not statistically significant. Internal consistency of this section can be described as acceptable ($\alpha=0.696$), and it is both reliable and valid.

The taxonomy extrinsic-integrative vs extrinsic-instrumental, used by certain researchers (e.g. Brown, 2000), is also used in this study. Learners with high integrative motivation have been traditionally associated to individuals interested in learning a foreign language in order to get to know native speakers and/or their culture. Nowadays, according to Gardner (2010), integrative motivation refers to a constellation of attributes and for a

language learner to be described as an integratively motivated individual, among other considerations, s/he will have to be emotionally interested in the speakers of that language. These do not seem to be the feelings of our engineering students, according to data depicted within Table 2. The scores of μ for items 1 and 4 seem to justify our statement; nevertheless, the SDs for both items are considerably high. Our students seem to be particularly interested in knowing as much English as possible (items 3 and 5), not just for maximizing their proficiency, but also in case they have to migrate to a place where English is widely spoken (something that might be particularly relevant at this point in time). Data was also analysed in connection with the students' L1 (B vs S vs B/S) and no statistically significant variations were observed. Cronbach's Alpha ($\alpha=0.688$) can be considered acceptable. Finally, it is worth considering that overall SDs for integrative motivation are consistently and relatively high if compared with SDs for instrumental motivation.

The following two subsections within Table 2 try to identify to what extent our students are instrumentally motivated (in connection with both GE and CLIL/ESP/EMI). Instrumentally motivated learners want to learn a language because of practical reasons. The best known and the most frequently mentioned instrumental motivation is money. Some items in the questionnaire deal with this idea of motivation (2, 3 and 5 for GE). Outstandingly high μ values are reached for most items, both in GE and CLIL/ESP/EMI, except for item 4 in GE, and items 1 and 3 in CLIL/ESP/EMI. In general, there is little dispersion (low SD values) in both cases, except for item 1 in CLIL/ESP/EMI. To sum up, it can be said that according to the scores presented in Table 2, the instrumental motivation of these students is consistently high. Although the difference is not statistically significant, the fact that the overall μ scores are slightly higher for GE (3.193) than for CLIL/ESP/EMI (3.068) draws our attention. Cronbach's Alpha values are 0.709 (GE) and 0.744 (CLIL/ESP/EMI) respectively. Finally, both sections can be considered reliable and valid.

An exploratory factor analysis was performed for this section on Motivation to know the amount of variance explained by each factor. Note that as we extract consecutive factors, they account for less and less variability. As far as intrinsic motivation is concerned and following Kaiser Criterion, only the first factor was retained and the remaining four factors were dropped. This first factor accounts for 59.73% of the variance (eigenvalue = 2.986). Items 1, 2, 4 and 5 saturate on factor 1, a dimension that could be represented by

“determination” (motivation for doing an activity for the pleasure related to developing knowledge and new ideas or (sensation of) mastering a task). For extrinsic motivation, we focus firstly on integrative motivation. Here, only the first factor is retained. It accounts for 61.161% of the variance (eigenvalue = 3.058). Items 1, 2, 3 and 5 saturate on this factor, a dimension we have represented by “attitudes towards a worldwide culture”. Secondly, we focus on instrumental motivation. The analysis performed for GE and CLIL/ESP/EMI provides the following data: two factors present eigenvalues greater than 1 for GE (2.682 and 1.035) and also two factors for CLIL/ESP/EMI show eigenvalues greater than 1 (2.473 and 1.115). To sum up, the first two factors for GE and for CLIL/ESP/EMI explain respectively 74.370% (53.656% + 20.714%) and 64.105% (44.184% + 19.921%) of the original variables’ variability. In other words, out of 100% of the studied phenomenon’s total variance for GE and CLIL/ESP/EMI, 74.370% and 64.105% respectively, are explained by these two factors.

Table 3 shows how much variability is explained by each item of the so-called instrumental motivation and GE versus CLIL/ESP/EMI, and how much of this variability is loaded on each factor or component. On the one hand, it can be observed that items 1 and 2 for GE and items 2 and 5 for CLIL/ESP/EMI are the worst explained variables in the model since they account for less than 80% of the original variability. On the other hand, the variability explained in the model for items 3, 4 and 5 for GE and items 1, 3 and 4 for CLIL/ESP/EMI is high (enough). Moreover, items 2 and 5 for GE saturate on factor 1 (a dimension that could be represented by “money” or “future earning”), while items 1, 3 and 4 load on factor 2 (represented by “social status”). For CLIL/ESP/EMI, only item 1 loads on factor 2 and items 2, 3, 4 and 5 load on factor 1, a dimension that could be represented by “a tool to succeed” (“English as a tool to succeed in current engineering studies and future career”).

Items	GE			CLIL/ESP/EMI		
	Communalities	Components		Communalities	Components	
	Extraction	1	2	Extraction	1	2
1	0.682	-0.074	0.756	0.894	-0.007	0.901
2	0.792	0.659	0.133	0.796	0.709	0.087
3	0.901	-0.043	0.858	0.921	0.788	0.133
4	0.997	0.087	0.910	0.887	0.936	-0.049
5	0.889	0.992	-0.103	0.752	0.803	-0.051

Table 3. Communalities and extraction matrix for instrumental motivation of GE and CLIL/ESP/EMI.

The last section in the questionnaire contains items on “self-rating of proficiency in English”. Research indicates that self-evaluation plays a key role in fostering an upward cycle of better learning (Simons, 2002). In our study, “self-rating” should be understood as self-evaluation or self-judgment of the quality of the students’ work and command of the target language. Table 4 shows some results of the so-called “self-rating” section that are used for descriptive statistics. The most obvious conclusion is that the level of self-confidence of these students with respect to their command of English is, to a certain extent, surprisingly high. An ANOVA showed no statistically significant differences between the groups - ($F=1.0$, $p=0.1$) for B vs. S vs. B/S. High or very high μ values for all items were obtained. Finally, SD scores are sustainably low.

Self-rating of proficiency in English (N=132)				
1	2	3	4	5
μ /SD	μ /SD	μ /SD	μ /SD	μ /SD
3.291/0.863	3.158/1.093	3.015/1.103	3.613/0.996	3.282/0.903

Table 4. Overall mean (μ) and standard deviation (SD) scores for self-rating items (1 to 5) (see Appendix).

The coefficient obtained for Cronbach’s Alpha was 0.702 (“acceptable” internal consistency) and it can be assured that this section of the questionnaire is valid and reliable.

To summarize our findings, by taking into account the data presented and our three hypotheses, we can state the following:

1. As far as our first hypothesis is concerned -the participants will show a positive attitude towards learning English via CLIL, ESP or EMI, irrespective of their L1-, it must be accepted since historical events do not seem to influence or interfere and, as we have observed, attitude towards learning English is positive (even more than in 2003) irrespective of the students’ L1.
2. With reference to our second hypothesis -they will show almost exclusively extrinsic motivation, with a high level of instrumental motivation and a very low level of integrative motivation-, this must be rejected due to the following facts: a) their level of intrinsic motivation is relatively high; b) the students show both intrinsic and extrinsic motivation (considering integrative and

instrumental motivation as a whole); c) integrative motivation levels are lower than intrinsic motivation levels.

3. Our third hypothesis -they will not consider themselves as (balanced) trilingual subjects- can be rejected, since according to their self-evaluation, their level of self-perceived proficiency with respect to their command of English is high and, consequently, they clearly consider themselves individuals who have competence in three languages. However, the hypothesis should be accepted if the adjective “balanced” is added to the description of the term trilingual.

6. Discussion

On the one hand, the findings included in this research paper with respect to attitude show that these learners hold a very positive or favourable attitude towards learning English. If compared with results obtained in 2003, the differences for some of the items (“I prefer to be taught in English” and “I would not mind marrying an English speaker”) have improved significantly, despite the facts presented within the second section of the paper. These were seen as a potential source of negative emotional attitude (Feng & Chen, 2009) towards foreign languages but they do not seem to interfere with our students’ successful learning process. On the other hand, the different connotations the three languages may have among the Basque society in general, and particularly among our engineering students, do not seem to interfere either: 1) Basque and Spanish are their main languages of instruction but they perceive English as a foreign but, simultaneously, global and natural additional language; 2) the historical events that might have influenced their opinions about foreign languages - Basque was about to disappear during Franco’s regime - do not seem to affect their learning process; 3) their L1s are different (B vs. S vs. B/S) and although their feelings about a foreign language may be different, they are not an obstacle for successfully learning it.

As Cohen and Dörnyei (2002: 172) point out, “motivation is often seen as the key learner variable because without it, nothing much happens”. Student motivation tends to be stronger when the learner has specific rather than general goals for language learning but it can be lessened when students have negative attitudes or prejudices toward the target language and/or the people

who speak that language. The fairly high result obtained for our students' extrinsic-instrumental motivation to learn English was fairly predictable since these students are taking or have taken non-compulsory CLIL/ESP/EMI lessons. The most likely explanation for this high level of instrumental motivation could be that students in general are more likely to exert effort on a course if they anticipate an eventual payoff in terms of their future professional lives.

The relatively high level of intrinsic motivation shown by the participants in this study suggests that they are interested learners and, as Ryan and Deci (2000) state, they perceive themselves as more academically and professionally competent. This description seems to be appropriate enough for our own students but we could add that they probably use more deep-level learning strategies, persist more and are more confident.

Learning another language is not like learning mathematics or thermodynamics. For this reason, learning English is likely to involve not only the linguistic and cognitive capacities of the learner, but also their social, cultural and moral senses. In other words, as Dörnyei and Csizér (2002: 453) state, "the core aspect of [...] the integrative disposition is some sort of psychological and emotional 'identification'". The notion of extrinsic-integrative motivation has evolved since it was introduced in the late 1950s by Gardner and Lambert (1972) because the world itself has changed greatly since then. At that time, social groups associated with particular languages were much more clearly identifiable but nowadays globalization has brought about a new society in which English is shared by many groups of non-native speakers.

Our students may be a case in point of learners of English that do not associate the language with a particular geographical or even cultural community but with a supranational policy involving technological innovation, international business, world travel, etc. Our results show that although there are individual differences in extrinsic-integrative motivation in connection with English, they are not significant. The students analysed in this paper, as a whole, show low integrative motivation levels. This finding seems to match those of Dörnyei and Csizér (2002: 453): "some sort of 'integrativeness'-related factor typically emerges in empirical studies on L2 motivation". English is an aspirational language in many ways and our students seem to be willing to share the privilege native English-speakers experience in terms of communication purposes since the tendency is for

English to take over as the instrumental language, at the expense of all others. These key questions reinforce the idea that they see English as a tool that plays, or will play, a vital role in their lives but the language does not belong to them (they seem to have just hired or borrowed it). An additional explanation for their high instrumental motivation could be that they are senior and Master's students and, consequently, they are aware of the instrumental importance of English when an engineer is about to enter the employment market where her/his chances of getting a good job without mastering this international language drop dramatically.

According to the data collected for this paper, the self-perceived English proficiency of our students seems to be high enough to describe themselves as individuals who are competent in three languages. One possible explanation for the high values observed could be that our students are highly motivated students who take CLIL, ESP and/or EMI courses voluntarily. This probably means that apart from being aware of the importance of English, they feel confident when dealing with different topics in English. Nevertheless, this does not tell us the whole story since extramural English is nowadays inevitably involved in the learning process of students.

Taken together, these findings suggest that our students hold a positive attitude towards English and are motivated to keep improving their command of it. Although this may appear somewhat surprising, considering the role of Basque and Spanish as the main languages of instruction in the Basque school system, the context of the present learning situation should be considered when interpreting these results. The students within the present context speak Basque and/or Spanish at home, but they have voluntarily chosen to be partially instructed in English. A likely reason for this could be the high level of self-confidence they show with respect to their command of English.

7. Limitations, conclusions and insights

The methodological limitations of our small-scale study cannot be omitted: sample sizes in 2013 ($n=132$) and in 2003 ($n=123$), lack of prior research studies on motivation in connection with engineering students, and self-reported data (the items on self-rating of proficiency in English). Among the limitations of the researcher, the restricted access to more people with

similar characteristics to those involved in the study, clearer measures of longitudinal effects (only attitude has been compared with data available from 2003), and potential or hidden biases this researcher may show (e.g. words one may have used, consciously or not, with a positive or negative connotation) should be included.

One of the peculiarities of the present study (with its limitations) is that Spanish and English hold higher levels than Basque in terms of status. This language is still a minority language even within the Basque Country, whereas the need to learn English is taken for granted by these engineering students and it is reinforced by local language policies. For these reasons, our first conclusion is that we have to continue researching into students' attitude and motivation, to learn from them in this and other contexts. Consequently, by working together researchers and authorities in charge of assessing the linguistic needs of a community, public money can be spent in a more efficient way by implementing enhanced education programmes.

Basque and Spanish are everyday communication languages outside the classroom in the Basque Country. Despite this fact, a significant number of our students consider their level of proficiency in English high or very high. The students have *a priori* few chances to use the foreign language actively outside a formal setting. Nevertheless, with the trend towards globalization and Western societies demanding engineers who are proficient in English, they often develop a bicultural identity rooted in their local and global cultures. Arnett (2015: 59) also states that through the media, especially the internet, people tend to “develop a global identity that gives them a sense of belonging to a worldwide culture”. Regarding this perception, our second obvious conclusion could be that our engineering students seem to view English as the international language that might be a passport to future jobs at home and abroad.

Trilingual programmes are spreading to various bilingual areas in Europe but, at least in Southern Europe, research is still at an early stage, and we, therefore, lack systematic knowledge of such programmes. Then, although certain researchers (e.g. Dörnyei & Ushioda, 2011) consider that learners enjoying a good language motivation and a positive attitude towards an L2 or L3, English in our case, can learn it more successfully, our third conclusion would be that further research is necessary in order to answer confidently (as far as this is possible) the questions raised concerning such multilingual experiments. This is so much more so considering that

researchers such as De Angelis (2007) and Jessner (2006) have convincingly demonstrated that learning in an L3 (or further languages) differs in many ways from learning in an L2.

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NOTES

¹ Model A: most subjects are taught in Spanish; Model D: most subjects are taught in Basque; Model B: 50% of the subjects are taught in Spanish and 50% in Basque. To choose A vs. B vs. D can give us a first picture of the background the students have grown up into.

Appendix. Questionnaire

Attitudes towards learning English

1. I like hearing English spoken
2. English should be taught to all pupils in the Basque Country
3. I like speaking English
4. English is a difficult language to learn
5. There are more useful languages to learn than English
6. I prefer to be taught in English
7. Learning English enriches my cultural knowledge
8. I would not mind marrying an English speaker
9. English is a language worth learning
10. I would like my children to be English speakers also

Intrinsic motivation vs. Extrinsic motivation

• Intrinsic

1. I like the English language
2. I enjoy learning English very much
3. I would rather learn English than any other language
4. I learn English simply for the sake of learning it
5. I feel the need to speak proper English

• Integrative: I study English because...

1. I am interested in the culture, history or literature associated to the English-speaking world
2. I would not mind immigrating to a country where English is widely spoken
3. I have a strong desire to know all aspects of this language
4. I like to communicate with people who speak English
5. I am determined to achieve maximum proficiency in English

• Instrumental: I study English because...

1. I want to be able to speak this international language apart from Basque and Spanish
2. to be fluent in English will help me to find a good/better job more easily
3. I feel that good knowledge of English will give me an edge in competing with others
4. it is the predominant language of almost 50 countries
5. increasing my English proficiency will have financial benefits for me

• Instrumental: I'm taking/have taken CLIL/ESP/EMI courses because...

1. most books from my reading list on engineering are written in English
2. it is the main language of science, technology and academia
3. most engineering literature I deal with is written in English
4. it can allow me to be part of multidisciplinary and multicultural teams
5. I would like to be fully proficient in the English used in engineering

Self-rating of proficiency in English

1. I feel I am ready (proficient enough) to interact with native and foreign English speakers
2. I am able to express my ideas, emotions and feelings in English with confidence and ease
3. Due to my command of English, I consider myself a trilingual individual (B/S/E)
4. I am linguistically ready for multicultural and multidisciplinary team work
5. I have succeeded in learning English