



Engineering students' motivational variables towards English and the learning of the English language

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ABSTRACT

This study examines the influence of motivational variables (integrative vs. instrumental motivation, attitudes, L2 anxiety and linguistic self-confidence) towards the learning of English in the current globalised university context. A total of 76 engineering undergraduates at the University of the Balearic Islands (U.I.B) participated in this study. A questionnaire was used to elicit students' responses. The results indicate that contrary to previous research (Wimolmas, 2013), integrative reasons for learning the English language have the greatest influence on ESP students' motivation. The findings also show that the integrative orientation that drives participants is more closely related to their wish to integrate and fluently communicate with a broader international community rather than with a specific valued target language community (Dörnyei, 2009; Papi, 2010). This new conceptualisation of L2 motivation involves a no longer clear-cut separation between integrative and instrumental orientations. The data also reveal that engineering students have highly positive attitudes to learn English, especially female students who score significantly higher in their ratings. Engineering students also show a high level of linguistic self-confidence, although they are found to experience a great deal of language anxiety mainly associated with classroom-related factors.

Key words: L2 motivation, attitudes, L2 anxiety, linguistic self-confidence, ESP students.

ABSTRACT

Este trabajo examina la influencia de las variables motivacionales (motivación integradora vs. instrumental, actitudes, ansiedad lingüística y confianza lingüística en una segunda lengua) hacia el aprendizaje del inglés en el contexto universitario globalizado actual. Un total de 76 estudiantes de ingeniería de la Universitat de les Illes Balears (U.I.B.) participó en este estudio. Se utilizó un cuestionario para obtener las respuestas de los estudiantes. Los resultados demuestran que, contrariamente a lo que sucede en otros estudios (Wimolmas, 2013), las razones integradoras vinculadas al aprendizaje del inglés son las que mayor influencia ejercen en la motivación de los estudiantes de IFE. Los resultados también

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indican que la orientación integradora que impulsa a los participantes está más directamente relacionada con su deseo de integrarse y comunicarse fluidamente con una amplia comunidad internacional más que con una apreciada comunidad concreta de la lengua objeto (Dörnyei, 2009; Papi, 2010). Esta nueva conceptualización de la motivación en una segunda lengua impide la distinción inequívoca entre la orientación integradora e instrumental. Los resultados también indican que los estudiantes de ingeniería demuestran actitudes muy positivas hacia el aprendizaje del inglés, especialmente las mujeres que obtienen puntuaciones significativamente más altas en este aspecto. Los estudiantes de ingeniería también disponen de gran confianza lingüística a pesar de que parecen experimentar un alto grado de ansiedad lingüística relacionada principalmente con aspectos vinculados al contexto del aula.

Palabras clave: motivación en una segunda lengua, actitudes, ansiedad lingüística en una segunda lengua, confianza lingüística, estudiantes de IFE.

1. Introduction

Over the last 20-25 years there has been a growing interest in promoting the internationalisation of universities in non-English speaking countries. In Europe, the Bologna Process has highlighted the importance of fostering foreign language learning, which has been connected to an increasing use of English in tertiary education due to the undeniable role of English as the de facto international language of economy, science, technology, academia and research, among others (Joseba, 2005). The introduction of the Bologna Process and the consolidation of the European Higher Education Area (EHEA) have consequently led to numerous reforms and to a redesign of curricula. Different national language policies have been implemented to improve the low level of English among university students in order to provide them with the necessary knowledge and skills to be competent in the global market. As part of the internationalisation of Spanish universities, the Spanish Ministry of Education has put forward several initiatives. Thus, university students are now required to demonstrate an intermediate level of English (B1 or B2) according to the CEFR (Common European Framework for Reference) before graduation. University degrees must also include different mechanisms in their curricula to help students meet that requirement, such as obligatory or optional content courses in English or English for Specific Purposes (ESP).

In this globalised university context, the study of ESP students' motivation to learn English as a second language takes on a special importance since motivation has long been recognised as a crucial factor determining L2 achievement (Gardner, 1985; Ellis, 1994; Dörnyei, 2001a; Masgoret & Gardner, 2003). Indeed, literature on L2 motivation reports the key role student motivation plays in educational success in general (Dörnyei 2001b). Thus, according to Spolsky (1990), highly motivated students are likely to learn more and more quickly than less motivated students. In the same vein, Gardner (2006, p. 241) states that: "students with higher levels of motivation will do better than students with lower levels". However, motivation has proven difficult to define due to its complex multifaceted nature (Gardner, 1988). As Williams (1994, p. 84) points out: "there is no room for simplistic approaches to such complex issues as motivation".

Gardner (1985, p. 10) defines L2 motivation as “the extent to which an individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity”. Later on, he further explains that motivation refers to the combination of effort and desire to learn the language as well as favourable attitudes toward learning the language (Gardner, 1988). In fact, motivation to learn a language is affected by students' positive attitudes towards the target language (Gardner & Lambert, 1972). In this way, attitudes, defined as “the sum total of a man's instincts and feelings, prejudice or bias, preconceived notions, fears, threats, and convictions about any specific topic” (Gardner, 1980, p. 267), are therefore regarded as components of motivation in language learning. In fact, numerous studies confirm that attitudes and motivation are two highly inter-related factors and both play a key role in second language learning (Dörnyei 2001a; Masgoret & Gardner, 2003; Bernaus et al., 2004).

Research on L2 learning motivation often makes a distinction between two main types of motivation, namely, integrative and instrumental motivation (Brown, 2000). The former focuses on the individual's need to interact with, and become integrated into the culture of the target language community (Gardner, 1983; Richards, 2003). Conversely, instrumental motivation comprises concepts of practical value for learners in order to promote their career or business opportunities, facilitate their access to scientific and technical information or just help them pass a course test or exam (Gardner, 1983; Saville-Troike, 2006). According to Gardner & Lambert (1972), motivation to learn a L2 language is closely related to students' positive attitudes towards the second language community as well as their desire to communicate with, and integrate with valued members of that community. Therefore, Gardner (1985) advocates that L2 learners with positive attitudes toward the people and culture of the target community will learn the second language more effectively than those learners who lack such positive attitudes. Csizér & Dörnyei (2005) also consider integrativeness as a crucial factor in motivated behaviour.

However, more recent studies have shown that instrumental motivation can also be positively related to L2 achievement (Masgoret & Gardner, 2003). In fact, the internationalisation of English has challenged the very notion of the culture of the target language community or ‘valued community’, leading Dörnyei & Csizér (2002) to reformulate integrativeness in terms of their ‘L2 motivational self-system’ (Dörnyei, 2009). This new theory of L2 motivation intends to expand the L2 motivation paradigm integrating various facets of L2 motivation (i.e. integrative and instrumental orientations, *ideal L2 self* and *ought-to self*) as well as other affective variables (i.e. L2 anxiety) which are more easily applicable across different linguistic and cultural contexts in this current era of globalisation (Ryan, 2009; Taguchi et al. 2009; Papi, 2010). From this perspective, integrative motivation is perceived as an identification process with ‘the ideal L2 Self’, an ideal image of oneself as a proficient L2 speaker which reinforces learners' integrative disposition (Dörnyei, 2009). This redefined concept of integrativeness is seen to feed on both attitudes towards members of a possibly international L2 community, and purely instrumental aspects such as getting a better job or earning a higher salary, blurring in this way the clear-cut distinction between integrative and instrumental motivations. In fact, these two

latter motivational constructs are found to be positively related and, therefore, are not to be considered as opposite ends of a continuum (Dörnyei, 1994; Liu, 2007).

Within this broader motivational framework, other key variables such as emotional states have also been identified as having an impact on L2 achievement. According to Papi (2010), it is reasonable to assume that motivation can affect emotional states like L2 anxiety in language learners. L2 anxiety is defined by MacIntyre (1999, p.27) as “the worry and negative emotional reaction aroused when learning or using a second language”. Horwitz et al. (1986) consider L2 anxiety as a specific construct associated with the second language learning process. Various studies have shown that linguistic anxiety can have a negative influence on motivation, attitudes, and L2 achievement (Horwitz et al., 1986; MacIntyre & Gardner, 1989; Hashimoto, 2002; Liu 2007). This affective variable has also been negatively associated with linguistic self-confidence (Clément et al., 1977), a motivational factor that comprises self-perceptions of linguistic competence associated with low levels of anxiety in using the L2 (Noels et al., 1996). Thus, lack of anxiety seems to play a major role in determining L2 self-confidence, and therefore, it is believed to be a “prominent characteristic of motivated language learners” (Papi 2010, p. 470).

Given the crucial role of English in the academic and professional lives of ESP students and the relevance of students’ motivation, attitudes and affective variables on L2 learning, this study attempts to examine some of the major motivational variables of engineering undergraduates to learn English.

2. Research questions

The main aim of this study is to investigate some of the main motivational factors affecting engineering students towards the learning of English as an L2. More specifically, the following research questions were addressed:

- 1) What type of motivation (integrative vs. instrumental) do ESP students have towards the learning of English?
- 2) What kind of attitudes do they have to learn English?
- 3) Are there any differences in the attitudes of ESP students across gender?
- 4) What is their degree of language anxiety towards English?
- 5) What is their degree of linguistic self-confidence?

3. Research methodology

3.1. Participants

The participants of this study were 76 ESP students studying Engineering (i.e. construction, mathematics, telematics engineering and computer engineering) at the University of the Balearic Islands (UIB). All of them were enrolled in a specific ESP English course (i.e. ‘English for Engineering’) designed to facilitate those students the fulfilment of the mandatory requirement for all undergraduates to demonstrate a

B2 (CEFR) level of English proficiency prior to graduation.

As regards gender, as can be seen in Table 1, there was a higher proportion of male (78.4%) than female (21.6%) students. The majority of respondents (82.4%) were between 20 and 25 years of age, 14.9% of the participants were between 26 and 35 years and only 2.7 % of them were between 36 and 45 years old.

	Frequency	Percentage
Male	58	78.4%
Female	16	21.6%
Total	74	100.0%
Missing v. 9	2	
Total	76	

Table 1. Participants' sex

3.2. Instrument and data collection

A 33 item questionnaire was administered to all students during their normal class time in autumn 2015. Participants were asked to rate all the items on a 5 point Likert scale ranging from 1 = totally disagree to 5 = totally agree. The questionnaire consisted of the following sections: 1) background information; 2) attitudes towards English (items 1-6); 3) instrumental motivation (items 7-16); 4) integrative motivation (items 17-26); 5) linguistic anxiety (items 27-31) and 6) self-confidence towards the learning of English (items 32-33). Sections 2, 3 and 4 concerning attitudes and motivation were adapted from Clément et al. (1994), Gardner's Attitude /Motivation Test Battery (AMTB) (1985) and Prapphals' Attitudes Testing (Prapphal, 1981) (see also Wimolmas, 2013). The other factors (sections 5 and 6) were based on Dörnyei's 'The L2 motivational Self-System' (2005, 2009).

In order to check for internal consistency of the scales, Cronbach coefficients were calculated separately for each section: 1) attitudes towards English ($\alpha = 0.711$; 6 items); 2) instrumental motivation ($\alpha = 0.689$; 10 items); 3) integrative motivation ($\alpha = 0.820$; 10 items); 4) linguistic anxiety ($\alpha = 0.912$; 5 items) and 5) self-confidence towards the learning of English ($\alpha = 0.752$; 2 items). As can be seen, the items show a high level of internal consistency with this specific sample (76 respondents).

The questionnaire was administered in Spanish. Participants were given 15 minutes to complete the questionnaire. The test administrator stayed in the classroom in order to clarify any doubts or questions from students.

4. Results and discussion

4.1. What type of motivation (integrative vs. instrumental) do ESP students have towards the learning of English?

The first research question attempted to examine whether engineering students were more integrative or instrumentally oriented towards the learning of English.

The mean scores and standard deviations within each category were calculated for both types of motivational constructs (integrative and instrumental). The data (Tables 2 and 3) has been arranged in descending order of importance so as to facilitate interpretation of results. Table 2 shows participants' results on instrumental motivation.

Items: Instrumental motivation	N	Mean	SD
12. 'Learning English is important for travelling abroad.'	76	4.53	0.621
13. 'Learning English is important for making me a knowledgeable and skilful person'.	76	4.29	0.892
11. 'I am more interested in furthering my higher education than in learning the English language itself'.	76	3.76	1.118
14. 'Learning English is important for making me an educated person'.	75	3.69	1.127
15. 'Being proficient in English can lead to more success and achievements in life'.	76	3.61	1.059
10. 'I am more interested in earning a university degree and a good job than learning the English language itself'.	76	3.33	1.258
8. 'I simply quote the textbooks and do not really communicate when speaking or writing in class'.	75	3.03	1.335
9. 'I am interested in reading only English textbooks for my university study, but no other English texts, e.g. newspapers, magazines'.	76	3.00	1.414
7. 'I mainly focus on using English for class assignments and the exams'.	74	2.81	1.279
16. 'Being proficient in English makes other people respect me'.	75	2.79	1.124
Overall mean = 3.48			

Table 2. Participants' instrumental motivation

As can be seen in Table 2, the three top highest instrumental motivating factors were the following: 'Learning English is important for travelling abroad' (item 12, $\bar{x} = 4.53$), 'Learning English is important for making me a knowledgeable and skilful person' (item 13, $\bar{x} = 4.29$), and 'I am more interested in furthering my higher education than in learning the English language itself' (item 11, $\bar{x} = 3.76$). These results seem to confirm that engineering students are quite aware of the important role of English as a language for international communication, although learning English is not given preference over completion of their specific degree studies or the consolidation of further specialisation within their chosen fields of research (Al-Tamimi, 2009).

As regards the three lowest scoring items, the data reveal the following in order of importance: 'I am interested in reading only English textbooks for my university study, but no other English texts, e.g. newspapers, magazines' (item 9, $\bar{x} = 3.00$), 'I mainly focus on using English for class assignments and the exams' (item 7, $\bar{x} = 2.81$) and 'Being proficient in English makes other people respect me' (item 16, $\bar{x} = 2.79$). These latter results suggest that students tend to focus on their specific language needs (English for Specific Purposes) rather than on more general

language learning objectives. These are clearly instrumental reasons for the learning of the language. However, in line with Dörnyei's 'L2 motivational self-system' theory (2009), the highest instrumental scoring item (item 12: 'Learning English is important for travelling abroad') might also be associated with an integrative type of orientation which points to a desire to communicate and integrate with a broader international community rather than with the target language community. As can be seen, all the items in Table 2 score above 2.5 on a 5 point scale, which indicates that all the instrumental factors are perceived as major aspects in the learning of English.

Table 3 presents the results of integrative motivation. Interestingly, and contrary to previous results (Wimolmas, 2013), the findings in this study show that engineering students are more integratively rather than instrumentally oriented to learn English since the average mean score of integrative motivation ($\bar{x} = 3.60$) is higher than the mean score of instrumental motivation ($\bar{x} = 3.48$). As can be observed (Table 3), the data reveal that the three top highest scoring items concerning integrative motivation were the following: 'Learning English enables me to transfer my knowledge to other people, e.g. giving directions to tourists' (item 21, $\bar{x} = 4.25$), 'Studying English enables me to understand English books, films, pop music, etc.' (item 17, $\bar{x} = 4.21$), 'Studying English enables me to keep in touch with foreign acquaintances' (item 19, $\bar{x} = 4.18$). These findings show the importance granted to communicative aspects of learning the language such as giving and receiving information or keeping in contact with people abroad. Additionally, item 17 (i.e. interest in English films, pop music, etc.) could also point to a sense of affinity with the target language community although it may not necessarily refer to just nationals of a particular English-speaking country. In fact, this finding can also be linked to current social tendencies influenced by the phenomenon of globalisation.

Items: Integrative motivation	N	Mean	SD
21. 'Learning English enables me to transfer my knowledge to other people, e.g. giving directions to tourists'.	76	4.25	0.926
17. 'Studying English enables me to understand English books, films, pop music, etc.'	76	4.21	0.914
19. 'Studying English enables me to keep in touch with foreign acquaintances'.	76	4.18	0.934
20. 'Studying English enables me to discuss interesting topics in English with people from other national backgrounds'.	75	4.17	0.950
22. 'Studying English enables me to participate freely in academic, social, and professional activities among other cultural groups'.	76	4.03	1.107
18. 'Studying English enables me to better understand and appreciate the ways of life of native English speakers'.	76	3.78	0.974
24. 'Studying English enables me to appreciate English arts and literature'.	76	2.89	1.250
23. 'Studying English enables me to behave like native English speakers: e.g. accent, using English expressions'.	76	2.88	1.200
25. 'Studying English helps me to be an open-minded and sociable person like English speaking people'.	76	2.87	1.340
26. 'I am determined to study English as best as I can to	76	2.75	1.256

achieve maximum proficiency'.

Overall mean = 3.60

Table 3. Participants' integrative motivation

The items registering the lowest scores as regards integrative motivation were the following: 'Studying English enables me to behave like native English speakers: e.g. accent, using English expressions' (item 23, $\bar{x} = 2.88$), 'Studying English helps me to be an open-minded and sociable person like English speaking people' (item 25, $\bar{x} = 2.87$) and 'I am determined to study English as best as I can to achieve maximum proficiency' (item 26 $\bar{x} = 2.75$), which was placed last in order of importance. However, as can be seen, even the lowest ranked items registered mean scores above 2.5 points on a 5-point scale, which demonstrates the relevance of this type of motivation among engineering students. Items 23 and 25 clearly point to the students' assimilation of the cultural aspects of the second language community, presented both in national (item 23) and international terms (item 25). Item 26 also reveals students' interest in achieving the maximum proficiency in English presumably due to their desire to function effectively in their academic as well as their future occupational environments. At any event, the data show that the integrativeness that drives participants is more often related to their wish to integrate and fluently communicate with a broader international community rather than with a specific valued target language community (Dörnyei, 2009).

Overall, the findings seem to be positive since research indicates that integratively motivated students work harder and learn faster than those students ranking low on that kind of motivation (Gardner, Lalonde & Moorcroft, 1985; Gardner & MacIntyre, 1991; Lai, 2000; Masgoret & Gardner, 2003).

4.2. What kind of attitudes do they have towards the learning of English?

In order to investigate the second research question, participants were asked to rank 6 items concerning attitudes towards the English language. The descriptive results are presented in Table 4. Since items 3-6 expressed negative attitudes, the values for those items were reversed so that a high value indicates a positive attitude on every item.

	N	Minimum	Maximum	Mean	SD
*5. Learning English is a waste of time.	76	1	5	4.42	.983
*3. I hate English.	76	1	5	3.91	1.235
2. I plan to learn as much English as possible.	76	1	5	3.86	1.016
*6. I think that learning English is dull.	76	1	5	3.66	1.239
1. I really enjoy learning English.	76	1	5	3.58	.913
*4. I would rather spend my time on	76	1	5	3.14	1.055

subjects other than English.

*Table 4. Participants' attitudes. *Reversed values: the higher the score the more positive the attitudes towards the learning of English.*

As can be observed, the data reveal that respondents hold very positive attitudes towards the learning of English since all item scores are above 3 points on a 5 point scale. The top highest ranked item (item 5) is related to instrumental or more utilitarian aspects of the language, as students are very well aware of the fact that mastering English is considered a valuable asset in the global market and it can therefore help them increase their job opportunities. However, the findings also suggest that respondents seem to highly appreciate other more integrative aspects of the language such as the liking of English (see item 3, $\bar{x} = 3.91$; item 6, $\bar{x} = 3.66$, and item 1, $\bar{x} = 3.58$). Likewise, participants express their wish to learn as much English as possible (item 2, $\bar{x} = 3.86$) and admit liking to spend time studying English (item 4, $\bar{x} = 3.14$).

On the basis of these results, it seems evident that engineering students hold very favourable attitudes towards English and the learning of the English language. Again, these are positive results since motivation to learn a language is closely related to positive attitudes towards the L2 language. In fact, research indicates that attitudes have a great influence on students' success or failure in the learning process (Gardner & Lambert, 1972; Starks & Paltridge, 1996).

4.3. Are there any differences in the attitudes of ESP students across gender?

A t-test was run to examine potential attitudinal differences towards English and English language learning as a function of gender. The data show statistically significant differences between male and female students in the following attitudes: item 3 ('I hate English'; $t = -2.022$; $p = 0.047 < 0.05$), item 6 ('I think that English is dull'; $t = -2.370$; $p = 0.020 < 0.05$) and item 4 ('I would rather spend my time on subjects other than English', $t = -3.588$; $p = 0.001 < 0.05$). In line with other research studies (Karahan, 2007), female students registered higher scores on such items. This means that female students have more favourable attitudes towards English and the leaning of the language than male students. Therefore, we reject the null hypothesis that there is no difference in language attitudes across gender.

4.4. What is their degree of language anxiety towards English?

Section 5 in the questionnaire attempted to examine students' degree of language anxiety. The descriptive statistics are presented in Table 5. As can be observed, engineering students seem to experience a high degree of anxiety when using the English language since all items score above 2.5 on a 5 point scale. The highest

ranked item demonstrates that students feel embarrassed or believe they might sound stupid speaking in English due to the possible mistakes they may make (item 31, $\bar{x} = 3.37$). They also report getting nervous when they use English in class (item 27, $\bar{x} = 3.29$), presumably due to the fact of being judged by their fellow students. To a lesser extent, they indicate feeling nervous (item 29, $\bar{x} = 3.14$), uneasy (item 28, $\bar{x} = 2.95$) or tense (item 30, $\bar{x} = 2.83$) interacting with native speakers of the language.

In light of these results, and taking into account that L2 anxiety has consistently been negatively related to L2 learning and achievement (Horwitz et al., 1986; MacIntyre & Gardner 1989; Hashimoto, 2002), it is believed that greater attention should be paid to this affective variable so as to create positive learning environments conducive to more effective instructional approaches to L2 language learning.

	N	Minimum	Maximum	Mean	SD
31. I am afraid and/or embarrassed of sounding stupid in English because of the mistakes I might make.	76	1	5	3.37	1.365
27. I get nervous and confused when I am speaking in English in class.	76	1	5	3.29	1.305
29. If I met and English native speaker, I would feel nervous.	76	1	5	3.14	1.421
28. I would feel uneasy speaking English with a native speaker.	76	1	5	2.95	1.423
30. I would get tense if a foreigner asked me for directions in English.	76	1	5	2.83	1.300

Table 5. Participants' language anxiety

4.5. What is their degree of linguistic self-confidence?

The last section of the questionnaire examined respondents' linguistic self-confidence towards the learning of English. The data reveal that, in spite of their high degree of L2 anxiety (Table 6), engineering students have a very high positive self-confidence regarding their mastery of the English language (item 32, $\bar{x} = 4.20$) provided they make an effort. Respondents also believe they have a good ability to accomplish their goal and learn English effectively (item 33, $\bar{x} = 3.79$). Those findings seem to point to the close connection between positive attitudes and self-confidence (Clément, Dörnyei, & Noels, 1994). Since self-confident students show a higher expectation of success and are reported to invest more time and energy into the tasks (Richardson & Watt, 2005), these are considered satisfactory results.

	N	Minimum	Maximum	Mean	SD
32. If I make an effort, I am sure I will be able to master English.	76	1	5	4.20	.817

33. I am sure I have a good ability to learn English.	76	1	5	3.79	1.135
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Table 6. Students' self-confidence

5. Conclusion

Contrary to previous research (Wimolmas, 2013), this study reveals that engineering students seem to be more integratively rather than instrumentally oriented towards English and the learning of the English language. This is considered a positive finding since previous research suggests that students who rank high on integrative motivation are more successful in learning L2 languages than those who score high on instrumental motivation (Gardner & Lambert, 1972; Gardner & MacIntyre, 1991; Lai, 2000; Masgoret & Gardner, 2003). However, the data seems to indicate that the integrative reasons that primarily drive participants are not quite so much their appreciation of a specific valued community but rather their wish to integrate with, and fluently communicate with, a broader international community (Dörnyei, 2009). In fact, the top highest ranked motivating factor was: 'Learning English is important for travelling abroad', an instrumental factor which may have an integrative component, since it clearly demonstrates students' willingness to both integrate with, and interact with, an international community in this current era of globalisation (Papi, 2010). This conceptualisation of L2 motivation involves a no longer clear-cut separation between integrative and instrumental motivation. In fact, as Liu (2007, p. 128) points out integrative and instrumental orientations are positively related and "both are effectively loaded goals that can sustain learning".

The findings of this study also show that, overall, engineering students hold very positive attitudes towards English and towards learning the English language, suggesting the close relationship between motivation and attitudes in the language learning process (Dörnyei 2001a; Masgoret & Gardner, 2003; Bernaus et al., 2004). The data also reveal statistically significant differences in attitudes across gender, in accordance with results from previous studies that report higher attitudinal ratings among female students (Karahan, 2007). As far as L2 anxiety is concerned, engineering students show a high degree of linguistic anxiety, especially associated with the L2 environment. However, contrary to other research studies (Clément, 1986; Hashimoto, 2002), L2 anxiety does not seem to affect students' linguistic self-confidence. Thus, engineering students report a high degree of self-confidence in mastering the English language provided they put an effort into it. Students' perception of their ability to learn the language is also very high, pointing again to the high inter-relation between the different motivational variables: attitudes, motivation and self-confidence (Clément, Dörnyei, & Noels, 1994; Richardson & Watt, 2005).

Although further research is necessary to obtain a full picture of ESP students' motivational variables, it is believed that the findings of this study may be used to get a better understanding of how some different motivational components (i.e. motivation, attitudes, language anxiety and self-confidence) work. Only by

identifying these variables will we be able to promote the implementation of effective instructional strategies in order to enhance students' motivation and positive attitudes towards the learning of English, diminishing at the same time students' L2 anxiety.

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