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THE INFLUENCE OF TED TALKS ON ESP UNDERGRADUATE STUDENTS' L2 MOTIVATIONAL SELF SYSTEM IN THE SPEAKING SKILL: A MIXED-METHOD STUDY

Abstract

Over the past ten years, research on L2 motivation has been extensively influenced by Dörnyei's (2005, 2009) motivational paradigm, the L2 Motivational Self System (L2MSS). A fundamental aspect of Dörnyei's Motivational Self System are images. Their stimulatory character means that students who possess a more detailed ideal self are more likely to engage in the process of learning a second language than other students that have not articulated their possible selves. The aim of the study was to investigate whether engineering undergraduates' L2 motivational selves in terms of learning English and engaging in public speaking could be increased with a multimodal pedagogy that drew on the use of TED Talks. For that purpose, a one-group pretest-posttest research design drawing on a mixed methodology was conducted to analyse the motivational effects of implementing a multimodal pedagogy in the classroom during a semester. Findings showed that the intervention influenced positively on students' possible L2 selves and on their learning experience. There were statistically significant differences between the pre- and the post-intervention questionnaires. Additionally, analysis of the interviews and the post-intervention open questionnaires suggested that the ideal L2 self is a potentially powerful generator of motivation.

Key words

L2 motivational self system, motivational selves, multimodal, public speaking.

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1. INTRODUCTION

The role of English in the field of engineering has been rising to the point that these days it is looked upon as a must-have basic educational skill. The twenty-first century engineers are expected to have a good command of a great number of interdisciplinary and interpersonal competencies (e.g. critical thinking, decision making, teamwork, and communication skills). It therefore follows that engineers, who are commonly assumed to be technically proficient and to exhibit creativity and inventiveness, are also expected to master the distinct skills which comprise a foreign language: reading, writing, listening and speaking. The global competitive workplace also expects engineers to communicate fluently with their counterparts across the globe and to demonstrate proficient communication skills which allow them to understand and disseminate technical information to a specialised and non-specialised public. In an attempt to bring further understanding to how engineering undergraduates can be motivated and engaged in public speaking, this research study explores the L2 motivation of 151 engineering undergraduates that study Technical English at the Technical University of Cartagena.

The aim of the study is to investigate whether undergraduate students' L2 motivational selves in terms of learning English and engaging in public speaking could be increased with a multimodal pedagogy that draws principally on the use of TED Talks. One important research focus was on the role TED speakers' multimodal way of communication played in shaping the motivation to learn an L2, by promoting a more vivid representation of students' future selves. It also aimed at finding out whether the multimodal style of TED Talks could have an effect on learners' linguistic self-confidence when communicating in English.

2. LITERATURE REVIEW

2.1. The L2 motivational self system

The widespread perception that the notion of 'integrativeness' and the 'integrative motive' (firmly grounded in L2 research from 1990s onwards) was ambivalent (Irie, 2003; Lamb, 2004; Noels, Pelletier, Clément, & Vallerand, 2000; Yashima, 2000, 2002) led Dörnyei (2005) to propose a new conceptualisation, the *L2 Motivational Self System* (L2MSS). This new construct draws on Gardner's (Gardner, 1985; Gardner & Lambert, 1972) theory, but widens its scope as it contemplates the globalisation process encompassing the position of second language learners in World English contexts (Dörnyei & Csizér, 2002: 456).

Rather than viewing integrative motivation orientation solely as identification with speakers of the target language and as a positive attitude toward the L2 community, Dörnyei (2005, 2009) broadens this view, and includes

cultural and intellectual values related to the language. This view seems particularly meaningful if one has in mind the current situation of foreign language learning contexts, where there is hardly any contact with members of the L2 group. The undeniable status of English as a world language has driven numerous researchers to extend the concept of 'integrativeness', and to include a globalised world citizen identity. Different researchers refer to 'integrativeness' in diverse terminological terms. Yashima (2000, 2002) alludes to an 'international posture', or the desire to communicate and participate in a non-specific L2 culture at a global level rather than a local level. Yashima's research (2000, 2002) is especially significant, as it is one of the first attempts to examine learners' attitudes to real and imagined communities in L2 learning and acquisition settings. After researching a group of Japanese learners' communicative orientations and drawing on the concept of willingness to communicate (McIntyre, Clément, Dörnyei, & Noels, 1998), Yashima developed the concept of 'international posture'. This concept seeks to enclose a tendency where the learner relates herself to the international community rather than to any specific L2 group, and conceives of herself as having concerns about international affairs, and an eagerness to interact with people other than those of their own nationality. Yashima (2002: 63) contended that international posture has an influence over motivation, and anticipates "proficiency and L2 communication confidence". Numerous empirical motivational studies have included the term among their variables (Hashimoto, 2002; Ryan, 2009). The concept of 'imagined community' (Norton, 2001), a term originally used by Anderson (1991), closely relates to the global identity learners might develop these days. Anderson hypothesised that there are three ways of belonging to and identifying with a community: *engagement* (the most immediate relation to a practice), *imagination* (images of the world individuals use to orient themselves, to reflect on their situation, and to discover new possibilities), and *alignment* (coordination of perspectives, actions, and contexts to achieve the expected action effects). Norton's 'imagined community' is based on the second mode of belonging, *imagination*, and is regarded as a way of viewing the relationship between learning and identity. Under the concept of 'imagined communities', learners depart from their experiences and imagination to build a world in which they feel they can belong, and in which the skills they possess are meaningful. In a later work (Norton & Pavlenko, 2004), the concept of 'imagined community' is further developed to theorise its influence in a second language setting and in the development of learners' motivation. As Pavlenko and Norton (2007: 669) argue, "language learners' actual and desired membership in *imagined communities* affect their language trajectories, influencing their agency, motivation, investment, and resistance in the learning of English". Norton's concept of 'imagined communities' is particularly meaningful to the present study. If students of Technical English embrace English as the international language of science and technology, they might regard TED Talks as opportunities to explore and imagine a range of identities for their future. These talks are likely to lead students to portray

specific representations of themselves in future states, involving images and thoughts, and influencing "motivated behaviour and instrumental action" (Markus & Ruvolo, 1989: 217).

The theoretical basis of the L2MSS draws largely on the concept of 'possible selves'. This concept relates to a trend in self-psychology, whereby the emphasis falls on the active and dynamic nature of the self-system, and where the self is located in the centre of motivation and action. The conceptualisation of 'possible selves' (Markus & Nurius, 1986) is pivotal to understanding the ways the self regulates behaviours. Individuals envision future states related to thoughts and images that may lead them to influence "motivated behaviour and instrumental action" (Markus & Ruvolo, 1989: 217). Markus and Nurius's (1986: 954) seminal paper describes the notion of possible selves as follows:

> Possible selves represent individual's ideas of what they might become, what they would like to become, and what they are afraid of becoming, and thus provide a conceptual link between cognition and motivation. Possible selves are the cognitive components of hopes, fears, goals, and threats, and they give the specific self-relevant form, meaning, organisation, and direction to these dynamics.

These psychologists stated (1986: 954) that individuals have expectations, hopes and fantasies about their futures. Drawing on past and present influences, individuals could construct visions of what they might eventually become:

> Possible selves [...] have the potential to reveal the inventive and constructive nature of the self but they also reflect the extent to which the individual is socially determined and constrained.

Dörnyei's L2 Motivational Self System is also influenced by the work of Higgins and his Self-discrepancy theory (1987). Higgins distinguished two types of future selves: the *Ideal Self* and *the Ought Self*. The *Ideal Self* refers to the "representations of the attributes that someone would ideally like to possess", and the *Ought Self* refers to the "representation of the attributes that someone (yourself or another) believes you should or ought to possess" (1987: 321). When an individual is able to perceive the difference between the actual self and the future selves, they can realise what is necessary to carry out in order to reduce this discrepancy. This discrepancy is what may prompt action in a desire to soothe the feeling of dissatisfaction, guilt, fear, or disappointment.

Dörnyei's construct (2009: 29) results in a broad construct of L2 learning that includes three main components: the Ideal L2 Self, the Ought-to L2 Self, and the L2 Learning Experience.

1. *Ideal L2 Self* refers to the L2-specific facet of one's ideal self, the learner's vision of herself as an effective L2 speaker.

2. *Ought-to L2 Self* refers to the attributes that one believes one ought to possess (i.e. duties, obligations, or responsibilities) in order to avoid possible negative outcomes. Duties and obligations are those imposed by external social groups or entities.

3. *L2 Learning Experience* concerns situation-specific aspects related to the immediate learning environment and experience' (teacher, methodologies and materials). Past and present learning experience might contribute, according to Dörnyei, to configuring L2 possible selves.

Numerous large-scale studies have already tested and validated the tenets of Dörnyei's (2005, 2009) *L2 Motivational Self System* in order to explore attitudes and beliefs among language learners, mostly in Asian contexts (Al-Hoorie, 2018; Brady, 2015; Csizér & Kormos, 2009; Mackay, 2014; Ryan, 2009; Taguchi, Magid, & Papi, 2009). As these empirical studies demonstrate, Dörnyei's motivational framework can be implemented in different learning contexts (i.e. primary, secondary or tertiary education) and in different countries and cultural settings (i.e. Europe, Asia). These studies have also shown that Dörnyei's broad motivational model is compatible with relevant conceptualisations of L2 motivation (i.e. integrativeness and instrumentality). It seems therefore warranted to research how this theoretical paradigm can offer useful strategic ways to help students develop and enhance their visions as proficient L2 users and speakers.

2.2. The role of vision

The role that vision plays in Dörnyei's (2005, 2009) L2 Self perspective is quite significant. A relevant aspect of future possible selves is that these can be understood as visions of oneself, images and senses. *Vision* is a key aspect of future self-guides, and is regarded as "one of the highest-order motivational forces" (Dörnyei & Kubanyiova, 2014: 9). Vision, the authors also note is one of the most reliable predictors of students' long-term intended effort.

Dörnyei and Kubanyiova (2014: 32) describe a framework composed of six components to enhance a vision-teaching practice. Teachers can engage learners' imagination by helping them reflect on the reasons and drives they have for learning a language, and by evaluating learners' positive and negative experiences in the process of learning an L2. The six components included in the vision-teaching framework are:

1. Creating the vision: Teachers need to help learners to create desired future selves and make learners aware of the advantages that learning an L2 could provide them with.
2. Strengthening the vision: Teachers need to help students see their desired language selves with clarity and instil urgency for action.

3. Substantiating the vision: Learners need to perceive possible selves as believable.
4. Transforming the vision into action: Future self-guides must go along with a set of specific action plans.
5. Keeping the vision alive: Learners' visions must be regularly activated so that they are alive.
6. Counterbalancing the vision: There is a need to have a corresponding feared self along with a desired future self.

The multimodal intervention that the present study carries out and that largely draws on the use of TED Talks in the classroom might contribute to developing and enhancing the construction of learners' visions as competent speakers and users of the L2 in the academic context and in the workplace. The motivational influence that successful language speakers at TED might have in creating and strengthening the vision of engineering undergraduates as successful speakers of English is likely to have an important influence in developing and strengthening students' desired language selves through multimodal strategies and techniques.

3. THE STUDY

3.1. Research questions

The following research questions (RQs) were formulated:

RQ (1): To what extent is there a development of students' ideal L2 selves as a result of a specially designed multimodal intervention?

RQ (2): How does a multimodal approach to public speaking influence learners' linguistic self-confidence in their oral presentations?

RQ (3): Which modes do students feel complement their public speaking skills?

RQ (4): How does a multimodal approach affect learners' motivation over the course of a semester?

3.2. Study design and participants

The present study used a mixed methods approach, as illustrated in Figure 1.

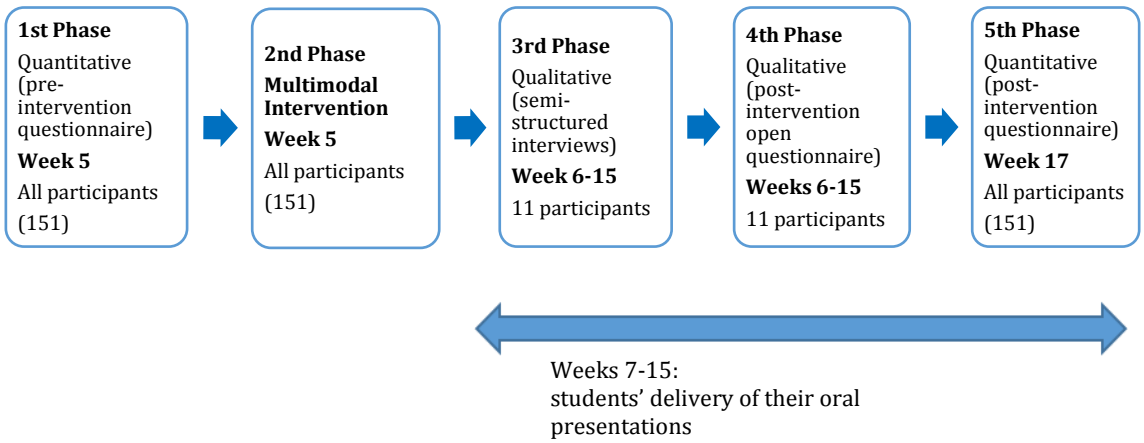

Figure 1. Mixed methods structure of the study

Due to curriculum and organisational restrictions, the present study could not have a control group. Thus, the type of research is pre-experimental and is based on a pre-test and post-test design of five groups with no control group (Larsen-Freeman & Long, 1991: 19-20). One major advantage of this type of research is, as Larsen-Freeman and Long note (1991: 19-20), that this can offer useful "insights into SLA", as it might undergo more accurate procedures at a later stage.

In total 151 students participated in the study. All of them took part in the first, second and fifth phases of the study while 11 students participated in the third and fourth phases (i.e. qualitative phases). These students volunteered to take part in these phases. The 151 students were aged between 18 and 31, with an average age of 20.9 (SD=3.1). In terms of gender, 90.7% of the students were male, and 9.3 were female. In terms of nationality, 89.4% of the participants were Spanish, 7.3% South American, and 3.3% were Erasmus students from Poland. In terms of the degree they were studying, 61.6% were from the Degree in Mechanical Engineering, 28.5% were from the Degree in Industrial Organisation, and 9.9% from the Degree in Electrical Engineering.

3.3. Data collection instruments

The design of the study involved the collection of both quantitative and qualitative data at different times during the semester. The questionnaire which students had to fill in at the beginning of the semester, and which formed part of the quantitative phase of this study, contained two parts. The first part included items aimed at measuring the students' attitudes and motivation towards learning English, and their predisposition to adopting a multimodal approach when communicating in English. The second part contained questions designed to elicit students' background information. All items were expressed as statements, and

participants marked their responses on a six-point Likert scale. The collection of data followed the instruments developed by Dörnyei and Csizér (2002), Csizér and Dörnyei (2005), and Ryan's (2008, 2009) Motivation Factor Questionnaire (MFQ). The final version of the instrument included 73 six-point Likert scale items, spread over nine different scales: *Attitudes Towards L2 Community*, *Interest in the English Language*, *Intended Language Effort*, *Instrumentality*, *L2 Anxiety*, *Linguistic Self-Confidence*, *L2 Learning Experience*, *Ideal L2 Self*, and *Multimodality.* Questionnaire items were, on average, short, and they did not exceed 20 words, except for three items, which were a bit longer. The researcher tried to use simple and natural language when writing the items. Ambiguous and emotionally loaded items were avoided. Regarding the format of the questionnaire, it was four pages long. Items from the nine scales were mixed to create a sense of variety and to prevent participants from repeating previous answers (Dörnyei & Csizér, 2012: 79).

The scale *Attitude Towards L2 Community* was relevant to the present study as this might be meaningful to understand how L2 students envision contact with the English-speaking world. This scale was composed of five items. The scale *Interest in the English Language* was composed of two items and aimed to measure students' attraction to the English language in terms of English structure, vocabulary and pronunciation. *Intended Language Effort* was composed of eight items and assessed both students' present and future intentions towards devoting effort and time to learning the English language. *Instrumentality* was composed of seven different items that covered a group of pragmatic instrumental advantages to acquiring English. *L2 Anxiety* included five items that referred to situation-specific language learning anxieties (Horwitz, Horwitz, & Cope, 1986: 128). These were pertinent to this empirical study, which aimed to gain insight into the oral competence issues experienced by Spanish Engineering undergraduates in an ESP context. *Linguistic Self-Confidence*, which included nine items, is an important variable in the present study, as the multimodal intervention was specifically designed to make students aware of the way different modes (verbal and nonverbal) co-occur in the majority of TED Talks to contribute to meaning-making. Directing students' attention to the way these modes are in constant interplay, and how speakers succeed in captivating their audience, might have an effect on learners' linguistic self-confidence when they communicate in English. *L2 Learning Experience*, or the situated motives concerned with the students' learning environment (i.e. teacher, methodology, peers and course materials), is a key motivational construct in the present research. This scale was composed of eight items, and assessed the degree to which students felt at ease with the immediate learning environment. *The Ideal L2 Self* scale consisted of seven items that referred to the connection that students might make between their L2 ideal selves and the portrayal of specific representations of themselves in future situations, involving images and thoughts of competent L2 language users in the academic and workplace contexts.

The instrument included a *Multimodality* scale with 22 items that were intended to reflect students' attitudes towards the use of multiple modes in communication, and their willingness to use some of these modes in their classroom oral presentations and in their future English presentations in the workplace. This scale included items that targeted students' perceptions of the contributing role that different modes (e.g. visuals, facial expressions, gestures, and proxemics) might play in their oral presentations. It also comprised items that targeted students' intentions to use some of these modes in their oral presentations. The aspects that were dealt with in this scale were as follows:

a) The contributing role of gesture in speaking (5 items)
b) The role of visuals in oral presentations (2 items)
c) The importance of head movement and facial expression in oral presentations (4 items)
d) The contributing role that the combination of different modes in speaking (i.e. gesture, head movement, gaze, and visuals) has (4 items)
e) The importance of word stress in speaking (1 item)
f) The role of intonation in speaking (1 item)
g) The important roles of pauses and varied rhythm in speaking (2 items)
h) Participants' assessment of TED Talks (3 items)

The post-intervention questionnaire (phase 5 of the study) contained two parts. The first part included the 73 items of the pre-intervention questionnaire. In addition to these items, the post-intervention questionnaire had four extra questions. Question 1 asked which modes, if any, had helped students feel good in their classroom oral presentations. Question 2 was aimed at establishing whether students had been motivated or not in the English course under a multimodal approach that drew on TED Talks. Questions 3 and 4 were aimed at eliciting a positive or a negative answer in relation to the possibility of students visualising themselves as future engineers, being able to give a talk in a TED style and incorporating some or all of the modes they had learnt during the intervention.

Qualitative data was collected at two different times during the semester, and through two different instruments. The first qualitative tool was an individual, semi-structured interview with 11 students (phase 3 of the study). The second qualitative tool was a post-intervention open questionnaire that these 11 students filled in and sent by e-mail to the researcher (phase 4 of the study). The main aim in conducting the individual, semi-structured interviews with 11 volunteer students was to allow learners to identify relevant aspects of their motivation, to ascertain those subtle aspects that could not be articulated in the questionnaire and that had to do with their motivation to learn English, the feeling of linguistic self-efficacy when speaking in the classroom, and their beliefs about the regular implementation of mode in their oral performances. Another objective was to obtain a closer look at the effects that the L2 multimodal intervention might have

on enhancing learners' future identities as proficient speakers of English. To reward volunteer students for their participation in the interviews, they received some coaching for the classroom oral presentations they were about to give. The coaching consisted of guidance about the different modes that they could use to enhance their performance, and a revision of the talk in terms of grammar, intonation and vocabulary. The main aim in having students fill in the post-intervention open questionnaires was to obtain a detailed account of the students' own impressions of their performance in their oral presentations.

In the initial phase of the research, 21 students were given a pilot questionnaire comprised of 68 items to determine the suitability of the proposed items, as well as the factor structure of the questionnaire. For this, an exploratory factor analysis was conducted using principal component analysis. The total explained variance was 44.62%, which is lower than the recommended minimum (60%). In addition, the analysis of the commonalities revealed that eight items did not reach a value of at least 0.5, and therefore do not contribute to the structure of the questionnaire. Regarding the internal consistency, the values of Cronbach's alpha coefficient for the factors were greater than 0.8, which indicated very good reliability, as shown in Table 1.

Factor	Cronbach Alpha
1	0,847
2	0,838
3	0,821
4	0,877
5	0,905
6	0,849
7	0,856
8	0,836
9	0,855

Table 1. Cronbach's Alpha reliability coefficient

An exploratory factor analysis was conducted using principal component analysis with Varimax rotation to determine the factor structure of the questionnaires (Table 2).

	Factor								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
I9	.368								
I18	.668							.	
I26	.694								
I34	.716								
I37	.498								
I38	.766								
I42	.726								
I44	.772								
I45	.737								
I47	.574								

I50	.481								
I55	.806								
I57	.632								
I60	.475								
I62	.421								
I64	.574								
I66	.801								
I68	.766								
I69	.431								
I71	.520								
I72	.525								
I73	.469								
I1		.561							
I10		.343							
I19		.430							
I27		.413							
I35		.506							
I2			.565						
I11			.374						
I20			.594						
I28			.550						
I36			.634						
I43			.752						
I51			.557						
I3				.660					
I12				.569					
I4					.623				
I13					.625				
I21					.464				
I29					.554				
I61					.511				
I63					.651				
					.764				
I65									
	1	2	3	4	5	6	7	8	9
I70					.571				
I5						.503			
I14						.791			
I22						.736			
I30						.683			
I58						.740			
I6							.796		
I15							.630		
I23							.652		
I31							.512		
I39							.522		
I52							.447		
I56							.613		
I59							.500		
I67							.765		
I7								.673	
I16								.631	
I24								.495	
I32								.415	
I40								.546	
I48								.587	
I53								.487	
I8									.594
I17									.814
I25									.694
I33									.802
I41									.683
I46									.474
I49									.594
I54									.609

Eigenvalues	17.46	5.72	5.41	3.32	2.85	2.34	2.20	1.06	1.04
% Explained variance	10.80	9.20	9.83	7.37	6.56	6.66	5.08	4.71	3.89
% Accumulated explained variance	10.80	20.00	29.84	37.21	43.77	50.42	55.50	60.21	64.10
KMO				0.804					
Bartlett's test of sphericity	Approx. chi- square = 8.966,77;gl=2.628, p < 0.001								
Cronbach alpha	.847	.837	.821	.877	.905	.849	.856	.836	.855

NOTE: Extraction method: Analysis of principal components. Rotation method: Varimax normalization with Kaiser. The rotation has converged in 14 items.

Table 2. Summary of the exploratory analysis of the questionnaire

3.4. Procedure

Questionnaires were distributed at two different times during the semester. The pre-intervention questionnaire was given at the beginning of the semester. The post-intervention questionnaire was administered at the end of the semester. Both questionnaires were administered by the author of this paper. In order to ensure a large representative sample and avoid any participants dropping out before the post-intervention questionnaire, the teachers of five different groups agreed to give every student 0.25 credits towards their final mark. Interviews in Spanish lasting 30-45 minutes were conducted by the author with 11 volunteer students after the administration of the questionnaire. All the interviews were conducted face-to-face, and audio recorded, to be transcribed later. Post-intervention open questionnaires were sent via email to the 11 students that had participated in the interviewing process.

3.5. The multimodal intervention

The multimodal intervention (phase 2 of the study) was designed to enhance students' visions of their ideal L2 selves and strengthen their linguistic self-confidence. During this intervention, six different TED Talks were partially shown and students' attention was particularly drawn to the moments when the interplay of modes was especially relevant to meaning-making. If students were able to visualise and realise how different modes were orchestrated in these talks, students might be encouraged to voice their 'ideas worth spreading' in a TED Talk-like style and might also be emboldened enough to transmit technical and scientific knowledge to a wide audience, contributing in this way to the dissemination of science (García-Pinar & Pallejá, 2018: 6). The intervention was conducted entirely in Spanish and consisted of two distinct parts. This took place on five different days with the five classes of ESP Engineering students.

The first part of the intervention lasted one hour, during which the researcher initiated students into the field of multimodality. The description of modes was shown to students with a power point including the affordances of individual modes, and the contributing role that the combination of words with different modes (i.e. gesture, visual, proxemics, facial expressions) had in achieving successful communication. In terms of gestures, students were introduced to McNeill's classification (1992: 76). Out of McNeill's four different categories of gestures, students were mainly encouraged to use *deictic gestures* to point at images and concepts in their power points, and *beat gestures* to accompany their speech, heightening the meaning to be conveyed. In the multimodal intervention, students' attention was also directed towards the combination of head movements and words. Additionally, students learnt the ways TED speakers use facial expressions and gaze to convey content and emotion, and evoke feelings of curiosity among viewers and listeners. Regarding the use of space, students were introduced to the ways TED speakers arrange and utilise their space to meaning-making. Finally, students learnt the relevant role that the visual mode can have in any oral presentation and were encouraged to use well-thought-out visuals in their presentations, as TED speakers often do.

The second part of the intervention, which lasted one hour, focused on partially showing six different TED Talks. The most meaningful minutes of six TED Talks in multimodal terms had been chosen by the researcher to be shown in the intervention. Students listened to and watched these clips of TED Talks while they actively participated in naming all the modes they noticed. The four different English lecturers who taught the five groups taking part in the study had chosen eight different technical and technological TED Talks to show and to analyse during the semester. The researcher's assumption was, therefore, that initiating students into the affordances of different modes at the beginning of the course, would lead to strengthening their modal literacy through the visualisation of different multimodal talks throughout the semester. Students' multimodal competence could therefore be a changeable aspect they could work on during four months.

4. RESULTS

The descriptive statistical analysis of the sample was carried out using basic descriptive methods, making it possible to obtain the absolute and relative frequency for the qualitative variables and the minimum, maximum and average values, as well as the standard deviation, for the quantitative variables. Additionally, Student's t-tests for dependent samples were conducted to study the evolution of the variables, after verifying the parametric assumptions of normality and equality of variances with the Kolmogorov-Smirnov test and Levene's test, respectively. The correlations between the variables were obtained with Pearson's

or Spearman's correlation coefficients, depending on the type of data. To determine the possible relationship between the scale's dimensions, the Pearson correlation coefficient (r) was calculated, the results of which are shown in Table 3. The results showed that the *Attitude Towards L2 Community*, *Instrumentality*, *Interest in the English Language*, *L2 Learning Experience*, *Linguistic Self-Confidence*, *Ideal L2 Self*, and *Intended Language Effort* dimensions showed a statistically significant and positive relationship with the *Multimodality* dimension.

	1	2	3	4	5	6	7	8	9
1. Multimodality	1								
2. Total motivation	.504***	1							
3. Attitude Towards L2 Community	.272**	.579***	1						
4. Instrumentality	.278**	.570***	.333**	1					
5. Interest in the English Language	.332***	.749***	.320***	.299***	1				
6. L2 learning Experience	.402***	.816***	.235**	.329***	.656***	1			
7. L2 Anxiety	-.316***	-0.106	-.158	-.071	-.281**	-.194*	1		
8. Linguistic Self-Confidence	.541***	.601***	.204*	.134	.502***	.563***	-.550***	1	
9. Ideal L2 Self	.495***	.715***	.342***	.502***	.450***	.557***	-.471***	.738**	1
10. Intended Language Effort	.506***	.802***	.306***	.372***	.560***	.801***	-.117	.436**	.498**

*$p < 0.05$ **$p < 0.01$ ***$p < 0.001$

Table 3. Correlation coefficients between the scale's dimensions

To determine whether there was a significant change in the students' perceptions and motivations, the scores obtained before and after the intervention were compared. Table 4 shows a description of the scores before and after the intervention, as well as the results of the t-test for dependent samples, conducted to compare the scores before and after the intervention. Dimensions *L2 Learning Experience*, *L2 Anxiety*, *Linguistic Self-Confidence*, *Ideal L2 Self*, *Intended Language Effort*, and *Multimodality* showed a statistically significant change, so the scores obtained following the intervention were significantly higher than the scores before the intervention. The increase in the means of two of the components of Dörnyei's Motivational Self System (2005, 2009), the *Ideal L2 self* and *L2 Learning Experience*, is noticeable. The mean of the Ideal L2 Self grew from 3.19 in the pre-intervention questionnaire to 4.60 in the post-intervention questionnaire. The mean of the L2 Learning Experience was 3.10 in the pre-questionnaire while a significantly higher mean (5.20) was obtained in the post-questionnaire. The mean of the dimension of *Multimodality* also experienced a remarkable change, increasing from 3.81 in the pre-questionnaire to 5.52 in the post-questionnaire.

Dimensions	Average, *mean (SD)*		*t*-Student test	
	Pre	Post	*t*(150)	*p*-value
Attitude	4.64 (1.05)	4.66 (1.04)	1.672	.097
Instrumentality	5.10 (0.52)	5.13 (0.59)	0.997	.320
Interest in the English Language	4.05 (1.02)	4.09 (1.04)	1.013	.313
L2 Learning Experience	3.10 (0.76)	5.20 (0.72)	16.871	**<.001**
L2 Anxiety	4.05 (1.03)	3.02 (0.99)	-13.686	**<.001**
Linguistic Self-Confidence	2.93 (0.80)	4.28 (0.79)	-16.889	**<.001**
Ideal L2 Self	3.19 (0.79)	4.60 (0.74)	-13.001	**<.001**
Intended Language Effort	3.94 (0.78)	4.90 (0.77)	-19.873	**<.001**
Multimodality	3.81 (0.55)	5.52 (0.50)	21.871	**<.001**

Table 4. Description and comparison of the scale's scores before and after the intervention

The post-intervention questionnaire included four extra questions. Despite the fact that these questions did not require explanatory information, they could give the researcher helpful quantitative data about how students visualised themselves in motivational terms at the end of the semester. The four questions that were included in the post-intervention questionnaire are the following:

(1) State whether any of the following modes helped you feel better during the oral presentation:
- gestures (deictics, beat, iconic, metaphorical)
- facial expression (occasional smile, raising eyebrows to emphasise something, nodding)
- head movement (tilted head movement to emphasise something, nodding)
- visual
- accent
- intonation
- use of space

(2) Have you been motivated this term to learn English through the teaching of Technical English mainly based on TED Talks?
(3) Do you imagine yourself in the future as someone who can give a TED-style Talk (incorporating all/some of the modes you already know)?
(4) Would this vision you have as someone who can give this type of talk motivate you to continue studying English?

The number and percentage of students for each of the answers to the four questions are shown in Table 5.

Question	Answer, *n (%)*	
	Yes	No
1		
Gesture	112 (74.2)	39 (25.8)
Facial Expression	75 (49.7)	76 (50.3)
Head movement	63 (41.7)	88 (58.3)
Visual mode	142 (94)	9 (6)
Word stress / Intonation	103 (68.2)	48 (31.8)
Posture	88 (58.3)	63 (41.7)
Proxemics	78 (51.7)	73 (48.3)
2	119 (78.8)	32 (21.2)
3	99 (65.6)	52 (34.4)
4	92 (61.2)	59 (38.8)

Table 5. Percentage of yes/no answers to questions 1-4 in the post-intervention questionnaire

Turning to the qualitative analysis, the data collected in the semi-structured interviews was audio-recorded and transcribed. The researcher read the transcripts repeatedly with the purpose of identifying recurrent L2 motivational patterns. Regarding the post-intervention questionnaires, these were also read repeatedly to identify recurrent patterns in relation to the participants' motivation and multimodality. Participants' responses that were closely related were grouped together (Loewen et al., 2009: 95). Additionally, identifying positive and negative descriptors in some of the students' responses allowed the researcher to understand participants' general beliefs about their L2 learning experiences and their ideal L2 selves. To measure the development of the interviewed students' L2 selves between the interviews and the post-intervention open questionnaires, this study used three coding categories that had previously been used by Chan (2014: 232): (a) emergent (i.e. selves which were not present at time 1 but present at time 2), (b) fading (i.e. selves which could be observed at time 1 but not at time 2), and (c) stable (i.e. selves which were observed at time 1 and time 2). These three categories were reformulated in the present study to include the multimodal facet. Thus, the coding categories this study used were: emergent ideal multimodal L2 self, fading ideal multimodal L2 self, and stable ideal multimodal L2 self.

The "emergent ideal multimodal L2 self" was applicable to five students (out of the 11 student volunteers) that in the interviews saw possibility of incorporating a set of modes in their presentations as quite unrealistic, and were sceptical about the positive influence that the implementation of modes may have on their speeches and on heightening their levels of self-efficacy. During the post-intervention open questionnaire positive changes could be observed in these students' ideal L2 selves, as they seemed to have realised the positive influence that the use of modes had had on their classroom oral presentations. The "fading ideal multimodal L2 self" was applicable to one student (out of the 11 student volunteers) who recognised the importance of using different modes beyond the verbal one, and considered the possibility of implementing these quite plausible at

time 1. Yet, at time 2 the ideal multimodal L2 self in this student faded, as the use of these modes had not facilitated his speech. Finally, the "stable ideal multimodal L2 self" referred to five students whose multimodal facet remained stable from time 1 to time 2. During the interviews and the post-intervention open questionnaires, they could see the possibility of including a wide array of modes in their presentations as quite high, and they conferred a facilitative role to these modes in developing their communicative competence.

5. DISCUSSION

The results of this study are in line with previous research by Magid (2014), Chan (2014), and Mackay (2014), who carried out self-intervention studies that focused on vision and imagery. These studies demonstrated that as a result of the motivational interventions, the strength of the participants' ideal L2 selves increased, their goals for learning English became clearer, and participants' imagination improved. In quantitative terms, it can be stated that there was a significant change in the students' perceptions of their L2 future selves and their motivation, which resulted in their having a more consistent future L2 identity at the end of the semester. Taking an overall view of the data on the motivational variables before and after the intervention, *the Ideal L2 Self* is one of the dimensions that underwent one of the highest mean increases, as shown in Table 4. The *L2 Learning Experience* or the situated motives concerned with the students' immediate learning environment (i.e. teacher, methodology, peers, and course materials) is a key motivational construct in the present research, as both the quantitative and the qualitative findings demonstrated. Students' past learning experiences in secondary education in relation to teaching methodology and to their failure to achieve communicative competence may have significantly influenced the beginning of the course in motivational terms, as the mean obtained in the pre-questionnaire showed (see Table 4). The mean of the dimension of *Multimodality* also experienced a remarkable change. This finding is significant to the present study, as it provides the basis for the assumption that students came to realise that the verbal part of their classroom oral presentations could be interspersed with different modes. It seems they came to realise that this implementation of modes was a relevant aspect of public speaking.

The qualitative data obtained from the interviews allowed the researcher to gain more detailed understanding of the development of students' ideal L2 selves. Findings from the qualitative data also revealed positive attitudes among some of the interviewed students toward the effect that the implementation of modes could have in developing their future selves as proficient speakers of L2. By visualising multimodal TED Talks, students may have been able to acknowledge that public speaking also entailed nonverbal communication conveyed through diverse behaviours such as gestures, facial expressions, proxemics and prosody.

Although most of them highlighted that multimodal public speaking was not a skill innate to them, they acknowledged it was a skill that they could gain mastery of through time and extensive training. These findings were similar to those previously reported by Chan (2014). Paired sample t-tests showed that students' ideal L2 selves increased at the end of the intervention. In qualitative terms, changes in various aspects of possible L2 selves were observed. Due to the greater emphasis that the course gave to the speaking skill, the emerging L2 Speaking self was the L2 self-facet that changed more acutely. The second research question of the present study asked whether a multimodal approach to public speaking might have some type of effect on students' linguistic confidence. Researching L2 learning from the perspective of the self can provide relevant insights into the field of L2 motivation, and into emotional states such as linguistic self-confidence and L2 anxiety. The classroom oral presentation was a task students widely regarded as an anxiety-provoking one in the course of Technical English. The high mean obtained in the dimension of *L2 Anxiety* in the pre-intervention questionnaire at the beginning of the semester also reflected this feeling of anxiousness towards public speaking among engineering undergraduates. The mean of the *Linguistic Self-Confidence* scale in the pre-intervention questionnaire was 2.93, a value that, according to the six-point Likert scale, was close to 3 *(slightly disagree)*. The means obtained in *L2 Anxiety* and *Linguistic Self-Confidence* in the post-intervention questionnaire that students filled in at the end of the semester were 3.02 and 4.28, respectively. Quantitative data, therefore, suggests that students felt less anxious and more confident about carrying out classroom speaking tasks at the end of the semester.

The analysis of qualitative data allowed the researcher to obtain a more nuanced view of the effect that a multimodal approach to public speaking had on students' beliefs in their own capabilities to succeed in their classroom oral presentations and in reducing their levels of anxiety. Judging by their classmates' degree of attention, six of the students acknowledged that the implementation of modes had heightened the content of their presentations. This fact led to an increase in their sense of efficacy, to facilitating their performance, to helping them visualise themselves as competent L2 speakers, and in some cases to reducing their levels of anxiety. Students stated that the use of gesture had helped them emphasise important parts of their discourse. These students might have been able to realise how the use of gestures had kept their audience wide awake. The audience's level of involvement had made speakers feel more self-confident. A few students, however, stated that the use of gestures had made them too aware of these, and in consequence, they had not felt good. Gestures, according to these students, have proven to be a hindrance instead of a communication enabler. Yet, almost all students regarded modes as being beneficial while communicating and as contributing to the enhancement of their levels of self-confidence. The third research question sought to determine which modes students felt complement their public speaking skills (see Table 5). Students' preference for the visual mode

was not an unexpected finding. The undergraduate of today becomes a 'reader-viewer' who needs both to draw inferences from written texts (Kress & van Leeuwen, 1996), and to adopt strategies that allow him or her to discuss visual images (i.e. modality, framing, composition). Engineering undergraduates, in particular, are aware of the implicit facilitative role of visual communication in scientific discourse "where communication is often nearly impossible without the use of visuals like tables, graphs, or figures" (Tardy, 2005: 320). This may lead students to consider important issues when they design the power points for their oral presentations such as the salience of some resources and the *aptness* (Kress, 2005: 19) of representing different types of content, the type of roles different illustrations might play, the kind of content that is expected from headings and illustrations, the type of information images facilitate, and where the visuals they use make a complex phenomenon.

The high rating of gestures turned out to be a more unexpected finding. In the post-intervention questionnaire, 112 students stated that the use of gestures had helped them feel better in their oral presentations.

The qualitative results were, to a large extent, consistent with the findings of the quantitative results in the post-intervention questionnaire. In the post-intervention open questionnaires, students were requested to name the modes they had used in their talks. All the students marked the visual mode, and most of them explained how the use of good visuals seemed to have captivated their audience. Ten students (out of eleven) acknowledged having used either beat deictic or iconic gestures during their performances. Three students claimed to have kept eye contact throughout, seven students used some type of facial expression (i.e. smiling and nodding), three students implemented varied intonation, and finally, four students paid attention to word stress. The post-intervention questionnaire included three questions that have led the researcher to further ascertain that the multimodal intervention and the course of Technical English influenced students' motivated behaviour over the course of a semester.

As detailed in table 5, 119 students reported to having been motivated with the multimodal approach followed during the course, 99 students stated they would be able to imagine themselves in the future as capable of giving a talk in a TED style and 92 students stated that perceiving this self-efficacy could lead them to become motivated to learn English in the future. Such results allow one to surmise that the multimodal intervention and the approach the course of Technical English adopted throughout the semester brought about some changes in the students' speaking self-guides.

6. CONCLUSIONS

As captured in different L2 motivational concepts (i.e. the ideal and ought-to L2 selves) vision can become a powerful motivational construct in contexts of

language education. The analysis of the quantitative data provided evidence to state that ideal L2 selves cannot be researched as static constructs, or as Henry (2015: 83) puts it, as "fixed targets that the individual strives to achieve or live up to". The multimodal intervention at the beginning of the semester followed by a multimodal approach adopted in the course of Technical English, which entailed the visualisation and analysis of eight different technological TED Talks, led to significant changes in almost all the means of the motivation-related dimensions the quantitative instrument used. These changes might have been triggered by how students reassessed their speaking skills. The intervention and the course approach set in motion the enhancement and development of some students' vivid and realistic visions of themselves as proficient L2 speakers. The multimodal intervention, as some of the interviewed students stated, turned out to be a positive learning experience. This may have prompted a reflection on the contributing role that the different modes had on becoming proficient English users. Students' priorities changed and new priorities emerged across a short timescale (i.e. from the time the interviews were conducted to the completion of the post-intervention open questionnaires). The researcher's multimodal guidance heightened students' motivation, as they realised that the implementation of diverse modes might allow them to perform beyond expectations, and this gave them a strong sense of linguistic self-efficacy.

Yet, the present research was limited by different factors. The most obvious limitation has to do with the type of pre-experimental research design used. Five classes of ESP Engineering students acted as an overall single group. Thus, the research design was a one group-pretest-posttest design, with no control groups, given that all the subjects that participated in the quantitative part of the study received the multimodal intervention. Therefore, the researcher acknowledges that the results obtained might have been influenced by not having a control group that could have provide a baseline for comparison.

The pre-experimental design conducted in this study may be the starting point for future quasi-experimental studies that include one or more control groups. In line with the above remarks, research on the influence of a multimodal intervention to strengthen students' linguistic self-confidence when speaking in public by influencing their ideal L2 selves may benefit from an expansion of scope to early educational stages (i.e. secondary education). Future undergraduates may very well profit from acquiring useful multimodal literacies to develop their speaking skill at an earlier stage.

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