

# NEW ICT LITERACIES AND HOLISTIC APPROACHES FOR THE EFFECTIVE LEARNING OF LANGUAGES IN TERTIARY EDUCATION<sup>1</sup>

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**Abstract:** This paper summarizes the evolution of different subjects of English for Specific Purposes and English for Academic and Professional Purposes. The aim here is to show a continuum of changes that have not started and finished in one subject alone but affect the whole curriculum. After the discussion section where advantages and drawbacks of the changes introduced are analyzed, we arrive at some conclusions regarding this five year period of development in the approach to the teaching and learning of the specific or academic English language in the Escuela Universitaria de Ingeniería Técnica de Telecomunicación, Universidad Politécnica de Madrid.

**Keywords:** Teaching and learning of English, English for Specific Purposes, English for Academic and Professional Purposes, University levels.

**Title in Spanish:** La competencia en TIC y los enfoques holísticos aplicados al aprendizaje de lenguas en el nivel universitario.

**Resumen:** Este trabajo resume la evolución que han experimentado distintas asignaturas de Inglés para Fines Específicos e Inglés para Fines Académicos y Profesionales. El objetivo principal es mostrar cómo el esfuerzo por mejorar las asignaturas afecta al currículo como un todo y no sólo a cada una de las asignaturas. Tras el análisis de algunas de las ventajas e inconvenientes de los cambios introducidos, se alcanzan algunas conclusiones sobre la evolución que han sufrido este tipo de asignaturas durante los últimos cinco años en la Escuela Universitaria de Ingeniería Técnica de Telecomunicación, Universidad Politécnica de Madrid.

**Palabras clave:** enseñanza y aprendizaje de lengua inglesa, Inglés para Fines específicos, Inglés para Fines Académicos y Profesionales, nivel universitario.

## 1. INTRODUCTION

This paper presents the summary of the activity carried out during the last five years at the Escuela Universitaria de Ingeniería Técnica de Telecomunicación, (Technical School of Telecommunication Engineering), Universidad Politécnica de Madrid regarding the teaching and learning of English through English for Specific Purposes (ESP) and English for Academic and Professional Purposes (EAPP) courses. The incorporation of information

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and communication technologies (ICT) in teaching and learning five years ago, was the beginning of a challenging and surprisingly fast evolution of the subjects towards completely new blended learning courses which have resulted in very positive results for students and for the teachers involved in the experience. This summary aims to be the last step finalising a series of papers presented at conferences cited in this work, regarding the development of the different subjects during this period as it is clear that we have arrived at the end of a cycle. The beginning of the experiences, the development of new ideas which integrate the most varied approaches to the learning of a language and the results are summarized here as a complete process towards the integration of active methodologies in tertiary education.

## 2. BACKGROUND INFORMATION

At the Universidad Politécnica de Madrid (UPM), the learning of English language is becoming increasingly important. The degree changes (2009-2010), which affects Engineering studies at the UPM, have included an English for Professional Purposes / English for Academic Purposes (EPP/EAP) compulsory subject across the institution at a B2 level according to the Common European Framework of Reference for Languages (CEFR) for all the students enrolled. In this context of growing interest for the language, the teaching staff at the Escuela Universitaria de Ingeniería Técnica de Telecomunicación has made an effort to integrate a varied range of activities which would eventually promote the learning and the use of English on a daily basis. Based on this intention to respond to what seems to be a clear necessity in recent years, the Centre has intensively promoted international courses (“Athens” 2008-2009 and “Athens” 2009-2010), cultural activities (“Around the world in English” and “English through films” 2007-2010) and is at the moment offering courses of general English in England at the University of Leeds Language Centre. At the same time, and funded by the UPM, the EUIT de Telecomunicación has developed more than fifteen innovation projects in the last five years where teaching methodologies have been at the centre of the work, and have been revised and changed to meet the requirements established by the new Higher Education system within the framework of the Bologna Process. This revision of methodologies has led in many cases, to the incorporation of blended learning approaches which imply the combination of traditional methodologies in the classroom with the use of an e-learning environment or “combines face-to-face and virtual teaching” (Hofmann, 2001, Coaten, 2003; Marsh et al., 2003). The use of virtual learning environments and specific learning platforms such as Moodle has also been supported by literature relating to the learning of languages (Hoffman, 2001; Driscoll, 2002; Oliver and Trigwell, 2005; Singh, 2003).

Regarding the present situation, the English for Academic Purposes, English for Professional Purposes and English for Specific Purposes courses currently taught in the different Centres at the Universidad Politécnica de Madrid will need to be revised, integrated and updated not only to meet the new teaching-learning requirements but also to give response to our real and specific contextual needs. First, in the Spanish Higher Education System the teaching of English is to, and often from, non-native speakers who are not even speakers of English as a second language. Secondly, although in the last few years there has been an increasing interest in the incorporation of English in Primary and Secondary

levels of education where Content and Language Integrated Learning (CLIL) methodologies are starting to be implemented, there is still a huge variation in English proficiency among students who start their studies at the University. Thirdly, our University is a Polytechnic where we are teaching future engineers from different specific fields.

This paper focuses on the revision of the research and innovation activity that has been carried out for the last five years in the EUITT within the area of linguistics and more specifically regarding the teaching and learning of English. For the last year this has been on the integration of English language learning in the routine of the Centre. To better understand the situation, it is important to start with a brief review of the students' proficiency in English as Foreign Language (EFL). According to the results of a study carried out with the participation of 255 students who started their studies in this Centre, it can be confirmed that the level of proficiency mostly attained is within the A level (A1 and A2) in the CEFR (Argüelles et al., 2010). The results of this study are therefore presented, to describe precisely the kind of heterogeneous groups that exist. Next, the project "Adaptation of the first year of Technical Engineering of Telecommunication to the European Framework of Higher Education" 2005-2006, will be described. This was a multidisciplinary project that aimed to integrate beliefs, habits and experiences of education from different areas of knowledge. Here, the participation of the area of linguistics is summarized, revising and analyzing the changes that the subject "Technical English" has experienced throughout these years. The change in this particular case has not been so much in classroom methodology, which has evolved towards content based instruction (Brinton et al., 1989), but rather with the implementation of a blended learning approach. The process of adaptation of the subject to b-learning methodology will be analyzed, finishing with a reflection on the usefulness and the possible scope of b-learning in the ESP classroom.

Then a description of the situation of one subject from the "English for Academic Purposes" module and the organizational results from a holistic blended learning approach derived from the first initiatives in other subjects will be given. Here, the teacher clearly assumes the role of coach or guide (Voller, 1997), applied to English for Professional Purposes. The proposal, developed and put into practice over four years now, aims to be a good example of the integration of different approaches to syllabus design where Computer Assisted Language Learning (Benson, 1998), Autonomous Learning (Benson, 1997 and 2001; Little, 1991), Project and Group Work (Fried-Booth, 1986) or even the Lexical Approach (Lewis, 1997) or the Grammatical approach, among others, have their place and their specific function within the course. This paper outlines the results from the actual learning in the virtual environment Moodle within the blended learning scope of a pilot group of students, who have tried and tested the adapted and new materials developed here for the last years. This subject, where action research has been carried out throughout its evolution shows interesting qualitative data concerning the benefits of the implementation of Moodle. It also leads us to some conclusions regarding the suitability of b-learning approaches in English for Academic and Professional courses.

Lastly, the project Integrated language Learning Lab (ILLLab) is presented. Born as a result from the many other previous experiences described before, the ILLLab was created to respond to the particular situation at the EUITT and thus its main goal was to investigate different practical strategies to incorporate English language in the routine of a traditional

Spanish engineering Centre, EUIT de Telecomunicación, UPM. Although the ILLLab was initially presented as an innovation project which apparently only included a number of more or less programmed activities, there was also, from the beginning of the experience, a certainty that some theoretical as well as practical research would need to be done and that the ILLLab would also have the, not less important, aim to encourage the research which underlies the practical proposal. Two of the most important areas of research that initially supported the idea of a lab created to offer alternatives to engineering students who want and need to go further in learning or putting into practice their English and these are:

- Content and Language Integrated Learning (CLIL) where the integration is understood from a communicative perspective and where the goal is the development of communicative abilities within a specific field or context (Dafouz and Guerrini, 2009).
- Development of materials both for autonomous learning as for example in Open Course Ware (OCW) as well as for more traditional others directed learning syllabus design, all of these, including the use of information technologies.

### 3. FIRST YEAR PROFICIENCY LEVELS

Although students at University are expected to start their degree with an intermediate level of proficiency in English language (B1- minimum), the collected data demonstrates that this expectation is in fact not true for 65% of the 225 students who took a placement test and attended a personal interview in September 2009 at the EUIT de Telecomunicación UPM. The study carried out is presented here to show how the students' proficiency level was estimated in order to make decisions about their learning.

#### 3.1. The study

A 100 item placement test was developed and adapted to the platform Moodle for immediate correction, feedback and to keep register of the results. On one day at the same time, 255 students were divided into groups of 25 and working in different classrooms each on a single computer, completed the test individually under the supervision of a teacher. Moodle was programmed so that once the questionnaire was opened it would remain operative for 50 minutes and would only allow one attempt so that when the student closed the questionnaire with the answers there would not be an opportunity to open it again.

As there were reasonable doubts that this grammar and vocabulary test would produce reliable and valid data concerning the speaking and understanding proficiency of the students, a statistically representative sample of 50 students was selected to have a personal interview. The examiner, with experience in oral tests, would be the same in all cases to avoid bias, which might derive from inter-rater reliability (Berkoff, 1985). Only three students did not attend the programmed interview which did not affect the final statistical results.

### 3.2. The results

The results from the first test can be seen in Table 1.

Level	Students
O1	12
O2	31
A1	58
A2	64
B1	46
B2	27
C1	12
C2	5
<b>Total</b>	<b>255</b>

Table 1. Statistical results from the placement test.

Almost 65% of the students are under a B1 level whereas only 35% have a proficiency level of B1 or above. Most surprisingly, almost 17% of the students are beginners or false beginners whereas at the other extreme, only 6.5% are advanced.

The same results can be also seen on the Graph 1 below:

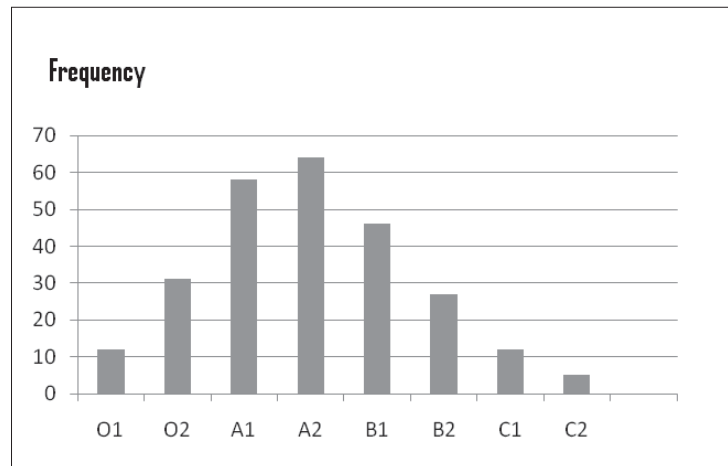


Figure 1. Statistical results from the placement test.

Regarding the interview, Table 2 shows the statistical results from a personal one-to-one interview where the interviewer would give a general proficiency level 0, A, B or C (according to the CEF) based on general impression criteria.

Level	Students
O	10
A	16
B	16
C	5
<b>Total</b>	<b>47</b>

Table 2. Statistical results from the interview.

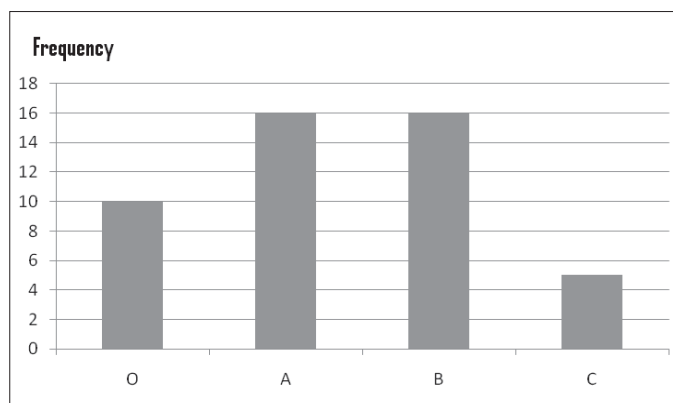


Figure 2. Statistical results from the interview.

The results of this study (see also Argüelles et al. 2010) show that the English language proficiency of the students who start their studies at the EUITT is below a B2 level. Moreover, although most of these students have passed University entrance examinations where an English level B1 according to the CEFR is evaluated, it is clear that most of the students have not acquired that minimal level. Therefore, one of the first conclusions is that proficiency in English language must necessarily be reinforced. Fortunately, from the moment that these results were obtained different decisions have been made with regard to the actions that must be taken from now on, however, these are not the first steps taken towards the improvement of students' English language proficiency as will be shown below.

#### 4. CONTENT BASED INSTRUCTION APPROACH IN THE MODULE "TECHNICAL ENGLISH"

The subject "Inglés Técnico" started in September 2005, together with other first year technical subjects, as a multidisciplinary project "Adaptation of the first year of Technical

Engineering of Telecommunication to the European Framework of Higher Education". The results and conclusions of the project with regard to the difficulties and advantages of the collaborative work among teachers of different subjects have been published (Blanco et al., 2006; Martín et al., 2007; Argüelles et al., 2008) so here the focus is on the evolution of the subject "Inglés Técnico" towards "Technical English".

Unlike the situation in other subjects in more technical areas that started the project together with "Inglés Técnico", the incorporation of active methodologies and of cooperative skills would not be the great challenge here. In the teaching and learning of languages, the methodologies based on the work of the student had been applied since the communicative approaches came into the classrooms in the 80s (Brumfit and Jonson, 1979; Littlewood, 1981 and 1984). Probably, for this project, the most obvious innovation with regard to the methodology was the incorporation of the learning platform Moodle and the first steps given towards a **Content based instruction** (CBI) approach to the subject. CBI was here seen as a communicative approach to language teaching and learning where authentic materials were mostly used for promoting the learning of new information on a subject matter as in Ruiz-Garrido, and Palmer-Silveira (en Fortanet-Gómez and Christine, 2008) or Met, 1991. The adaptation of the subject to this model of language learning had a series of advantages which contributed to students' motivation and the reinforcement of the control of the work that they had to do outside the classroom. Both motivation and control would lead effectively to the continuous assessment of the subject, which had been demonstrated to be impossible before and had effects on the whole program.

#### **4.1. "Inglés Técnico" and the changes oriented towards the new blended learning methodologies**

The most immediate decisions that were made in the subject "Inglés Técnico" as a consequence of the participation in this multidisciplinary project can be summarized as follows: the number of students would remain similar to the number in traditional groups (approximately 50) to evaluate the effect of continuous assessment on a large number of students; a continuous evaluation of the students' process and development was agreed but there would also be a final exam for research reasons, basically to make it possible to compare final results among pilot and control groups. The coordination among teachers was an attempt at coordinating the distribution of students work load and offering a programme based on a multi perspective content reinforcement. A students' guide was also published with the planning and activities to be covered during the year. Most of the activities (80 %) that were programmed for the classroom were cooperative.

However the most significant change in "Inglés Técnico", both to adapt it to the platform, as well as to the content-based perspective, implied a deep reorganization of the subject. In the new groups, an approach based on the content (Flowerdew, 1992; Gaffield-Vile, 1996; Jones, 1991; Leaver and Stryker, 1989) was selected where four main topics (Electronics, Global Communications, Sound and Image and Information Technologies) that relate to the degree specialities, would be the basis for the reading texts, the listening materials and vocabulary and for the grammar activities (Álvarez de Mon and Argüelles,

2005). Within this new framework, the subject also started to be mostly taught in English in the pilot groups.

#### 4.2. Adaptation of the subject “Technical English” to the virtual learning platform Moodle

The adaptation of the program to students with varied proficiency levels guided the first steps of the adjustment of the subject “Technical English” (Lerchundi et al., 2005-2006) to the platform Moodle, as it had to serve the students individual needs.

First, all the listening material that had been traditionally used in the classroom was adapted to the platform, to be used autonomously. The main aim was that each of the students could listen to the texts as many times as they needed to in order to understand them and to complete the proposed activity. In addition, the disadvantages that usually arise from the quality of the tape or reproduction of CDs in the classroom, would be avoided. The students would see their activities corrected immediately after finishing them and would have an unlimited number of attempts to do them correctly. Therefore, the aim of these listening activities changed from assessment in the classroom –whether the students were able or not to understand and answer a number of questions– to formative self evaluation at home, where the students had to make the effort to listen the number of times needed to fulfil a task and self-evaluate their own performance.

**Cuestionario de la audición 2 (Sustantivos)**

El siguiente cuestionario consta de dos actividades en la que tendrá que escuchar la audición 2.

**Pasos a seguir en la actividad 1:**

1. Lea e intente ordenar las frases para que formen un texto.
2. Escuche el fragmento "Conductors, insulators and semiconductors (2ª parte)" una vez. Compruebe su respuesta.
3. Si es necesario, vuelva a escuchar el fragmento.

**Pasos a seguir en la actividad 2:**

1. Lea las frases.
2. Escuche el fragmento "Conductors, insulators and semiconductors (2ª parte)".
3. Complete la actividad

**Nota:** Si lo desea puede bajar el archivo de la audición 2 haciendo click en "Enlace directo a este archivo" localizado dentro de la audición 2.

**1** Puntos/si: 6/6

**Ordene las frases numerándolas del 1 al 6 para componer un texto.**

5 ✓ ...according to how readily they permit an electric current to flow.

4 ✓ All materials can be classified into three groups

1 ✓ If we connect a battery across a body,

2 ✓ ...there is a movement of free electrons towards the positive end.

6 ✓ These are: conductors, insulators and semiconductors.

3 ✓ This movement of electrons is an electric current.

**2** Puntos/si: 6/6

**Complete las siguientes frases con la información de la audición.**

1. Free electrons  move towards the positive  end ✓ .

2. All  materials ✓ can be classified according to how readily they permit an electric  current ✓ flow.

3.  Materials ✓ can be classified into conductors,  insulators ✓ and semiconductors.

Correcto  
Puntos para este envío: 6/6.

Illustration 1. Listening material adapted to Moodle.



Secondly, the solutions for most of the grammar and vocabulary tasks that had been traditionally given during the lectures would also be on the platform so the students could self correct their activities. The face to face lessons then, would always start with a 5 to 10 minute collaborative task, to solve doubts concerning the solutions of the exercises or activities completed and self corrected previously.

**Video**

- Vídeo Wire Bonding
  - Cuestionario del vídeo Wire Bonding
  - Preguntas del vídeo Wire Bonding
  - Práctica de traducción del vídeo Wire Bonding
  - Solución de la práctica de traducción Wire Bonding

**Soluciones de ejercicios de clase**

- Traducción inversa - Textos 1 y 2 ("Transistors")
- Práctica de gramática unidad 2
- Práctica de gramática unidad 3
- Práctica de gramática unidad 4
- Práctica de gramática unidad 5
- Práctica de gramática unidad 6

**1** **Busque en los textos el equivalente a los siguientes nexos oracionales:**  
Punto/s: -- /10

- a medida que:
- actualmente:
- además:
- cuando:
- incluso en el caso de que:
- mientras que:
- por ejemplo:
- puesto que:
- si:
- sin embargo:

Illustration 2. Grammar and vocabulary tasks adapted to Moodle.

Thirdly, extra and revision activities, based on texts very similar to those used in the classroom and with activities of the same type to reinforce or to expand contents, depending on individual needs, were included on the platform, with precise instructions on how to use them according to the different levels and to the different needs of the students.

**Electronics**

Foro del tema 1

**Textos y actividades complementarias**

- Integrated Circuits (ICs)
- SUPERCONDUCTIVITY
  - Audición Superconductivity
  - Superconductivity
  - Digital Watch

**1** **Superconductivity**  
Punto/s: 7/8

The resistance of metals  varies  with their temperature. When they get hot, their resistance  increases . When they cool, their resistance  fall . The resistance of some metals and alloys steadily decreases as their temperature is  lowered , then falls suddenly to a negligible value at temperatures a few  degrees  above absolute zero (- 273°C). In other words, these materials have almost no resistance to an  electric  current at very low temperatures. They become  almost  perfect conductors. This is called superconductivity. It occurs only with certain  materials , for example lead, and only at very low temperatures.

Parcialmente correcto  
Puntos para este envío: 7/8.

Illustration 3. Complementary activities on Moodle.

After every hour of a traditional lesson in the classroom, the students would be asked to work for about an extra hour on the subject, following clear instructions: first revising what had been done during the lesson, then completing varied tasks, including assignments or quizzes related to the topic and then going on to the revision or additional activities which include video, texts for reading, web links etc., depending on their teachers' instructions or, on how confident they felt with the topic presented (Dickinson 1995).

#### 4.3. Results

The virtual environment Moodle for the subject "Technical English" was for the first three years of the pilot of the new course, the highest valued among all the first semester subjects. The students not only valued the activities of reading, grammar, vocabulary and listening comprehension proposed on the platform but also the b-learning methodology very positively.

Regarding the performance and centring our attention on specific data, the changes in the academic results in the subject, during the first three years, is summarized in the graph below:

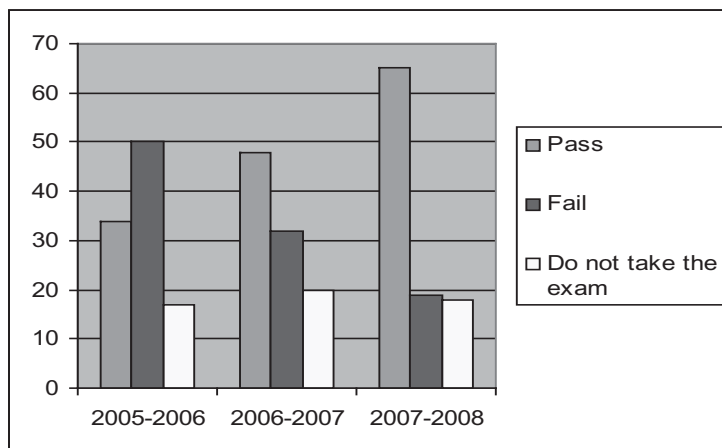


Figure 3. Evolution of academic results with the application of the b-learning methodology.

As stated previously, although 20% of the subject was assessed during the course to motivate students participation, another 80% of the final mark came from a final exam held for the eight groups of "Technical English" (one pilot group the first year, two the second year and all the groups in the third year) and corrected by the six teachers in the Department of Linguistics. The results were very positive, as over the years, more students passed the subject and fewer students failed. These results were understood to be connected with the general attendance at the lessons during the course, which had also increased. From the surveys and the informal interviews with the students that took place at least three times during each year, the same thing was deduced; that they liked the routine of the class, the

activities and the pace; they thought that the lessons were interesting, entertaining, and “different” and that they could learn more easily than in other subjects. It is probable that the problem with students who did not take the final exam was not the planning or the development of the course. The students rather used to point to the general work load in the first course as a whole. To mention only some of the presumed drawbacks of the approach, the experience of adapting the materials and have them ready and working properly on the platform was extremely time consuming and, at times, even stressful for the teachers involved. A complete report of the process and full results of the study can be seen in Blanco et al. 2006, Argüelles et al. 2008 and Hernández et al. 2009.

##### 5. A HOLISTIC B-LEARNING APPROACH IN THE EAP /EPP CLASSROOM

Therefore, in our Centre, as seems to be the case in the rest of Spain (Ruiz-Garrido and Palmer-Silveira, 2008) we are only at an initial phase with regard to the integration of a Content Based Instruction approach in the classroom. On the other hand, students who enroll in “Professional Communication III” are in the third year of their degree in Telecommunications Engineering, although usually they have been at the University for longer without any communicative contact with the English language. The result is that students who enrolled in the subject, again show, what was in the beginning considered to be an “alarming catalogue” of proficiency levels. With such variations, we do not need to be reminded here, of how different affective factors intervene in the learning of a language (Douglas Brown, 1981; Gardner and Macintyre, 1993), especially when the students have to speak in the foreign language and they can compare their performance in the foreign language with that of others.

The course-wide strategy of Professional Communication III is based on previous observation of groups enrolled both in this subject and in others, and the study of their improved adaptation to their contextual needs. Departing from these external constraints, some of the general approaches that could better describe the course are:

- **A task / project based syllabus** as a good basis to establish a more interactive relationship among students and between the group and the teacher. One particular advantage of project work is that either language or skills problems can be dealt with as they arise. Another interesting aspect is that students can work on a topic of interest within their field, in this particular case, reading selectively with a specific purpose: a final presentation.
- Connected with the former, the approach permits the adoption of a **negotiated component**, although within an external syllabus, which provides the students with opportunities to further intervene in their own learning (based on Holec, 1987 or Holme, 1996). During the first stages and after the teacher’s introduction to the task, the students discuss the suitability of different topics, plan, outline and present proposals and decide core topics to be developed in the final presentations.
- The virtual environment, Moodle, has implications for the entire curriculum but it is mainly seen as a means of promoting **learner autonomy**. According to Cotterall (2008: 116), good language learner practices, are shown in her research into aspects

of learner autonomy, where students reflect their willingness to practice. B-learning is here seen as a good opportunity to provide students with the necessary tools and enough material and guidance to do so. At this point, it is worth emphasising that b-learning must be understood as completely integrated learning, if it is to be successful.

Thus, we are speaking of the interaction of approaches and methodologies and their integration into a b-learning course. In what follows we are presenting some examples of what we have called a “holistic blended learning approach”.

### 5.1. Professional Communication III

This is the third part of a Professional Communication module, which was originally organised on a skills basis<sup>2</sup>. This oral part of the module was also traditionally thought of as having four parts or areas of content-a) socialising, b) telephoning, c) job interviews and d) presentations. Speaking and listening skills have been the basis and main aims of the course since the beginning.

#### 5.1.1. Part One: creating a good, relaxed collaborative atmosphere

To overcome the difficulties related to the students’ proficiency levels and anxiety mentioned before, the first two or three weeks of the course corresponding to the module “Socialising” are not only devoted to functions, vocabulary and skills but also and most importantly to creating a good, relaxed and collaborative atmosphere in the classroom:

1. According to Brown (1981) affective or emotional factors, which presuppose that human behaviour is dominated by emotion, directly affect the process of learning a second language. Therefore, during the first weeks the aim of the activities is to reduce anxiety derived from communicating in a foreign language, providing the means for positive interaction among students and between students and the teacher.
2. Coming back to the variety of levels, reflection on their own needs and understanding of the importance of autonomous learning must be a first step for students to design a plan to develop their own strategies to fulfil the course expectations (Wenden, 1991). Through the activities proposed both on the platform as well as in the traditional classroom at this stage, students are encouraged to collaboratively identify their own needs, in order to do what they are expected to do in the classroom. Collaboration is here identified as a crucial factor as higher level students report more frequent and better use of language learning strategies, as in Griffiths (2008: 89).
3. Students then, develop individual plans for improving different skills. The most basic learner contracts (Dickinson, 1987:98, 99), where students decide the skills they need to improve and list a number of limited activities they are going to engage in for a

<sup>2</sup> The evolution of the different subjects derived from the changes made following the aims established in different innovation projects and the new situation at the University presented in the introduction of this work will lead to a more integrated skills approach in the new English for Academic and Professional compulsory subject.

period of time can be useful. In this case, the forum in the platform is used as a basis for presenting a basic contract that can register commentaries from any other student or the teacher. The idea of a “commented contract” reinforces the idea of group collaboration and helps the establishment of reasonable personal objectives.

4. Oral fluency and accuracy and listening skills are considered very important in order to communicate in the group. Spanish is absolutely forbidden, therefore there is an integrative motivation to use English language. At the same time, it seems to be true that with the improvement in oral skills, students gain self-esteem (Wenden, 1991: 57)<sup>3</sup>.
5. With respect to the methodology, blended learning implies a commitment to exploit the resources of Moodle and the ones in the classroom in a complementary way. A task-based approach (Nunan, 1993) with emphasis on communicative competence is followed in order to effectively integrate all the resources offered both by the traditional classroom as well as by the virtual environment to reinforce learner autonomy. The last aim of this part of the course and probably the most important is for students to understand the b-learning platform Moodle as an integral part of the class and the course.

The image shows a screenshot of a Moodle course page titled "Final results" in a Microsoft Internet Explorer browser. The page content is organized into two main sections: "1 GREETINGS" and "2 TELEPHONING". Under "1 GREETINGS", there are several activities listed: "Introductions and greetings", "Thinking about learning skills", "Introductions and learning skills", "ATTENTION: Basic rules!!!", and "Follow-up questions". Below these are "Autonomous learning" activities: "Activities: Language skills", "Pronunciation tips", and "Activities: lecture, seminar and workshop". There are also "Audio files" (Greetings: audio files) and "Playback software with loop facility" (Sounscriber). Under "2 TELEPHONING", there are "On the phone" activities: "1. Preparing to make a phone call" (Listening 1, Questionnaire for Listening) and "2. Receiving calls" (Listening 1). The page is annotated with several grey boxes containing text, with arrows pointing to specific parts of the course content. The annotations are: "Create a good, relaxed and collaborative atmosphere in the classroom" (top), "Reflect on each own needs and understand the importance of autonomous learning" (pointing to "Thinking about learning skills"), "Develop individual plans for improving different skills" (pointing to "ATTENTION: Basic rules!!!"), "Improve oral fluency and accuracy and listening skills" (pointing to "Activities: Language skills"), and "Understand the platform Moodle as integrating part of the class and the course" (bottom).

Illustration 4. Module one “Greetings”, integrating traditional activities with reflection and development of individual learning plans.

<sup>3</sup> For other affective and personality factors that affect second language learning see Schumann, 1978.

The platform and the activities suggested in this first part of the course help students to reach all these objectives. First, students feel confident communicating in this forum, probably because, with the development of technologies, it has become a very familiar means for communication among young adults. The activity allows the students to reflect on their and others' needs and to understand the importance of autonomous learning. Reflection is the first step, in the traditional class and collaboratively, to organize a "realistic" personal plan to study English autonomously. Moodle has not only served as a means for the individual to communicate with the rest of the group but also as a meeting point where doubts or questions have an answer and where suggestions concerning how to better improve language skills are received.

### *5.1.2. Part Two: Integrating grammar, lexis and general skills with the learning of a language*

The rest of the course and the modules are based on more conventional decisions affecting the syllabus design. Telephoning, Job interviews and Presentations follow a lexical-functional approach, with a task content based instruction and integrating general skills for those specific contexts. According to Widdowson (1990: 98) we should not forget the importance of grammar even within a communicative approach: "On the contrary, it involves recognition of its central mediating role in the use and learning of a language".

As described previously, one of the advantages of a task / project based syllabus is that both language and skills problems can be dealt with as they arise. Given the competence variety in the group, it is not unusual here to revise such varied aspects of the language as the pronunciation of the words finished in "\_ed", modality and communicative functions, the simple present vs. the present continuous... The syllabus is adaptable enough to incorporate new extra activities (as extra material or revision) both in the classroom as in the platform as they are needed. It is worth emphasizing here the substantial amount of time and motivation needed to improve the teachers' own skills to adapt to this b-learning holistic approach. Not to mention the difficult role of the teacher as "facilitator" always ready to adapt to the situation, to think of the more productive way to solve different problems and ready to incorporate new activities on the platform including the technical knowledge.

### *5.1.3. Project work: the final presentation*

The final month's lessons in the traditional class are devoted to preparing a final presentation which will be given by students in groups of three. First, the students propose and select the topics of the presentation (aspects of interaction, specific areas of interest and the negotiated syllabus were discussed in 4.1). Then and with the help of the activities in Moodle and in the classroom they revise grammar and useful functions and phrases. Finally they prepare their presentation by means of collaborative work in the classroom. The final presentation is evaluated in collaboration with an external teacher<sup>4</sup>.

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<sup>4</sup> For the last three years Mr. R. Herington from the University of Leeds Language Centre, has collaborated in the evaluation of the students.

## **5.2. Results**

### *5.2.1. Participation*

Of the 49 students enrolled in the course in two groups A and B, two excused their not attending from the beginning which means that they would take a summative final exam in the month of June. The other 47 students participated in the course with regularly, both in the traditional classroom (more than 80% attendance on average) and especially in Moodle activities and also in the forums.

### *5.2.2. Satisfaction*

After the second month of the Course the students are asked to provide feedback about its development so far. Assuming that learners have intuitions about their individual needs, the externally chosen materials and other components of the course are likely to generate a response (positive or negative) on the part of the students. Based on the students' commentaries in face to face individual interviews, it can be concluded that they are very satisfied with the course. The aims of gaining spoken fluency and improving listening skills have been fulfilled. The collaborative work in the classroom receives a positive response as it is a necessary skill for the students' future careers, as well as the final presentation task, which is considered to be an essential way to acquire the necessary skills to make presentations in the future. Furthermore, extra activities with videos are also positively evaluated. The materials both in the classroom and in Moodle are also evaluated with very positive results and most students find it very difficult to answer the question "What would you change in the course?"

### *5.2.3. Proficiency levels*

With regard to the initial variation in English proficiency among students in the EUITT, the final marks received after this course show interesting tendencies and results. Out of the programme and for reasons which do not affect this course, 28 students who were about to start Professional Communication III did the Quick Oxford Placement Test, most of them (26) obtaining B1 and A2 levels according to the CEFR and only two students (2) a B2 level. Although language proficiency level is considered to naturally be a decisive factor to complete the subject more or less successfully, it is interesting to have a close look at the final marks that result from a continuous evaluation in the subject during the semester (Table 3).

<b>CERF</b>	<b>B2</b>	<b>B1</b>	<b>A2</b>
	9	<b>9,6</b>	8,3
	8,4	<b>9,3</b>	8,1
		<b>9,2</b>	7,9
		8,6	7,7
		8	7,6
		8	7,5
		7,8	7,3
		7,8	7,3
		7,7	7,2
		7,6	<b>6,8</b>
		7,6	<b>6,6</b>
		7,5	<b>6,4</b>
		7,3	
		7	
<b>Mean</b>	8,7	8,00	7,4
<b>Median</b>	8,7	7,8	7,4
<b>Mode</b>		8	7,3

Table 3. OPT proficiency pre-test and final results (0-10) in CPIII.

First, it is notable that the two highest final marks do not correspond with the two students who originally started at a B2 level; in fact, these students rank sixth and fourth in the global results. Secondly, 20 students originally distributed across levels A2 (8), B1 (11) and C1 (1) obtained final marks from 7.3 (the lowest mode) to 8.7 (the highest mean). Third, the three highest marks are obtained by students who are more proficient in English language and the three lowest marks are obtained by the least proficient in English language students.

## 6. INTEGRATED LANGUAGE LEARNING LAB

This Integrated Language Learning Lab proposal was recognized in June 2009 within the UPM Program for Innovation Projects. Generally speaking, the main aim of the ILLLab was to investigate the effects of the integration of English language in a degree in Telecommunications, in relation to student motivation and interest towards this language. The project was developed for a year in the EUIT de Telecomunicación (UPM) and was based on the fact that part of the students enrolled in the degree would not regularly follow any EFL course or would not regularly use the target language during this year in their degree. Therefore a number of varied activities were programmed, developed and integrated during the course, with the aim of gaining qualitative and quantitative information about the participation of the students in such activities and about their degree of satisfaction with the experience and the outcomes. This information would provide us with the means to reach



conclusions regarding the eventual relation success-cost of further integration of English language programmes or sustained activities in the routine of the Centre.

### **6.1. Integrating Content Language and Information Technologies**

The ILLLab, whose origins have been previously described in the introduction to this paper, has centred its activity in three areas of research and innovation:

- A module for technical content and English language integrated learning, including aspects related to the interdisciplinary development of IT materials. Content and language integrated learning (CLIL) is used here instead of CBI (see section 4) because although most literature understands both concepts to be the same we want to emphasize here that the use of specific content is not mainly used to support the learning of a language but both the learning of the content and the language acquire the same importance.
- A cultural module which includes two programmes: one new “English through films” and the other adapted from previous pilot experiences “Around the World in English” both also based in the adaptation to Learning Object materials and Open Course Ware approach.
- A theoretical research module concerned with diagnostic, placement and achievement tests.

As a further step in the integration of information and communication technologies (ICT) Learning Objects and Open Course Ware are seen as a way to permit free access to the materials developed or to be developed in the near future. Until a year ago, the use of Moodle had allowed the adaptation of activities to a virtual environment, but to gain access to these materials students must be enrolled in a course. LOs and OCW let us use materials with fewer restrictions, not only because they can be used in other environments different from Moodle but also because they can be adapted within different subjects for varied aims. At the same time, our students in the area of Telecommunications can actively participate in the development of learning objects, which later can be used autonomously or as part of different subjects.

#### *6.1.1. Learning Objects (LOs)*

A Learning Object is “Any entity, digital or non-digital, that may be used for learning, education or training”. “Any digital resource that can be reused to support learning Web-based interactive chunks of e-learning designed to explain a stand-alone learning objective” “A digitized entity which can be used, reused or referenced during technology supported learning.” (Ed Technology Glossary of Terms)

From 2000, with the huge advances in technology on the part of organizations such as the Institute of Electrical and Electronics Engineers (IEEE) the concept of Learning Object became well-known. With respect to the teaching of languages, this fundamental technological aspect, that implies that modular and self-content material (LO) can be

imported or exported from one platform to any other. Its reusability and its easy localization implies, necessarily, the collaboration of professionals from different areas.

#### 6.1.2. *Open Course Ware (OCW)*

In 2001, the Technology Institute of Massachusetts created an important consortium which integrated more than 130 universities across the world. This is related to the former point in the sense that the resources are open and freely distributed. Today, the Open Course Ware Consortium joins more than 200 institutions among which there are many Spanish ones.

Although with respect to the variety and the elaboration of the proposals, it is not easy to define the common characteristics of the materials usually found in OCW, it is quite evident that the materials incorporated here can be divided in two groups according to their reusability capacity:

- Structured and combined into a full structured subject
- Isolated and packaged into “Learning Objects” to be reused in other different contexts

As we had said before in the case of the Learning Objects, working together with experts in IT is an additional advantage for proposals in the area of foreign language teaching and learning.

#### 6.1.3. *Content and Language Integrated Learning*

Content and language integrated learning also fit the framework of the constructive model where the initial hypothesis is that language is learnt when there is a real need for communication (Halliday 1975, 1978). With respect to this approach, Smith-Gratto (2000) maintains that the constructivist learning on the web is based on: a) new experiences that go beyond the student’s class routine, b) activities for the students to revise and restructure their understanding, c) activities that imply the resolution of contextual problems and d) activities that imply social interaction.

Fernández Fontecha (2001) shows that integrated learning of curricular matters and proficiency in a foreign language can be achieved through different methods. Proposals go from the teaching of a whole curricular subject in the foreign language to the teaching of only one specific topic. In this context, the actual learning departs from real motivation related to the non-linguistic aspect of the subject. This learning style is highly related to the task based approach where students must use the foreign language to fulfil the task they have been asked to do, but also, the use of authentic materials is understood to be one of the most important factors in the framework of the CLIL. With respect to this last matter, it is a fact that IT makes the integration and accessibility of authentic materials easier but what is more, these materials organized in learning objects and offered by OCW, will permit the adaptation of the integrated methodology to the necessities and specific circumstances of the Centre, the group, the teacher or the specific needs of a particular group of students.

In section 4 the adaptation of materials to the subject Technical English were described. Five years ago we were adapting authentic materials to the ESP/EAP classroom in Moodle. After five years, today, we are adapting parts of different subjects across the curriculum to be learnt in English. Five years ago the language teacher was using the content of speciality to teach vocabulary, grammar, reading and writing in the context of Telecommunications. Today, our colleagues' content specialists are introducing English in their subject with the help of the expert in language teaching. And this is our achievement, the interest in learning English language at every level and by different means.

## 6.2. Results

The subjects "Historia de las Telecomunicaciones" and "Cálculo I" included materials in English during the first semester of the course in 2009-2010. After the end of the semester the students completed a questionnaire regarding this part of the course, which included, among others, the following questions:

1. Do you think that an Engineer should have a high proficiency in English?
2. Do you consider it a positive advantage to integrate activities in English as part of the routine of different subjects across your studies of Engineering?
3. To what extent do you think that introducing these activities promotes motivation in learning a language?
4. Evaluate the interest of the activities in English that you have done during the course.
5. Give your opinion about other activities related with the learning of English language that you would like to see incorporated in your studies.

The results indicate (1) that for students with an intermediate language proficiency, the inclusion of these kind of activities during the course have been positive, although maybe not enough alone to learn or to keep a language up to date;

"Me gustaría que se llevaran a cabo asignaturas completamente en inglés, pues es la mejor manera de adquirir altos conocimientos en esta lengua" (I'd like some subjects to be carried out completely in English, as it is the best way to get high proficiency in this language)

"Mayores recursos fuera de las clases y mayor número de cursos para aumentar el nivel de inglés" (more resources out of the classroom and more courses to improve my level of English)

"pues me gustaria que hubiera mas temas en ingles porque no me gustaria perder el nivel que tengo y por eso hay que practicarlo" (well, I'd like to have more units in English because I wouldn't like to loose my proficiency and therefore it must be practiced)

and 2) that the activities seem not to be as motivating for students with a lower level of proficiency who prefer to be offered a regular course in English as a foreign language.

“yo pienso que deberíamos tener asignaturas de ingles, en vez de dar ingles en otras asignaturas” (I think that we should have subjects of English instead of teaching English in other subjects)

“Tengo suficientes dificultades de momento como para pedir que me pongan las actividades en inglés, me parece que debería ser opcional.” (I have enough difficulties at the moment to ask for more activities in English, I think it should be optional)

It is in fact very difficult to introduce English in subjects where the teachers do not have a good command of the language even when the activities are on-line. On the other hand, teaching full content subjects in English would count against those students with a lower proficiency in English.

“Lo de que se introduzca la lengua inglesa en asignaturas de la ingeniería no me parece del todo bien, puesto que si yo voy a estudiar matemáticas no quiero que me vengán cosas en inglés, para eso están las clases de inglés. [...]El nivel de ingles es muy variado, es mas conveniente dar clases de ingles como tal a introducir inglés en algunas asignaturas porque muchos alumnos pueden verse desbordados.”

(About introducing English language in engineering subjects I do not see it as completely positive because if I am going to study Maths, I don't want to see things in English. [...] English proficiency is very varied, it is more convenient to have lessons in English as it is, rather than introducing English in some subjects because many students can feel overwhelmed)

With respect to suggestions that students make, most point out optional activities such as conferences:

“Algún curso o conferencia en inglés.” (A course or presentation in English)

“Creo que sería una buena idea incluir una conferencia en lengua inglesa para que nos vayamos acostumbrando a oír en inglés.” (I think it could be interesting to introduce a conference in English to get used to listening to English)

“Conferencias en ingles.” (Presentations in English)

“Alguna conferencia en inglés sobre algo relacionado con las telecomunicaciones.”

(A presentation in English about something related to Telecommunications)

“Conferencias en inglés, facilidades para el estudio de dicha lengua mediante moodle.”

(Conferences in English, help for the study of the language in Moodle)

The cultural module in the ILLLab, also based on the adaptation to Learning Object materials and Open Course Ware, includes two programmes: “English through Films” and “Around the World in English”. At the moment we have not yet got results from the experiment although there have been pilot studies in previous years with high participation and very good feedback on the part of the participants.

## 7. DISCUSSION AND FINAL CONCLUSIONS

Although it is true that the global results of the long term experiment are very positive it is undeniable that each action and each decision have resulted in a great deal of work.

First, the adaptation of different subjects to the platform implies an extra work load although the theory is that once the subject is prepared it is always less time-consuming to maintain. It is also said that, as most of the tasks can be automatically corrected, teachers have to devote less time to these routines. Neither of these premises has turned out to be true in our case, as, for the course to be up-dated, it needs continuous revision on the part of the teacher and, although some of the tasks are corrected automatically, teachers also have to offer guidance and support far beyond the face-to-face sessions. As a result, in order to achieve continuity, quality and high participation in the virtual environment as well as in the traditional classroom, the teacher becomes a 24 hour worker. Secondly, when a teacher assumes the role of “facilitator” and “guide” a further responsibility, which goes beyond the content of the subject itself is undertaken. Finally, in most cases, teachers need extra training to fulfil both expectations: the technical knowledge and the required leading skills.

Apart from these facts, technology advances at a pace which is difficult to keep up with for many language teachers. The practice in the classroom and the b-learning methodology described here have only recently been called “new technologies” while web 2.0 and later web 3.0 also appear in the teaching of languages with new opportunities to provide students with more updated and challenging communication tools. This means further adaptation on an ongoing basis.

Six years ago I started to work in a very traditional context, probably very similar to the one I would have found in other Centres and Universities across Spain. In my view, the new European Framework and the development of technologies have played increasingly important roles in the evolution of university language teaching. In recent years there have been innumerable innovation projects similar to the ones presented here, at many Spanish Universities, so this work must be seen only as one example. With regard to the holistic approach, the adoption of different components from varied methodologies has provided the students with opportunities to further intervene in their learning and to improve different skills depending on their initial needs. The virtual environment, Moodle, has proved to be of help to promote learner autonomy and the task based b-learning syllabus seems to be a good basis on which to establish a more interactive relationship among students and between the group and the teacher. The holistic b-learning approach has good results from the students’ point of view as it increases motivation and task self-esteem, which probably explains the high participation. It seems that the course design helps the achievement of one of its most important aims, which was to bring together students with three different initial proficiency levels and force them to work collaboratively. The results through the years also show that the students’ existing proficiency level has not been, in general, a final factor for obtaining better or worse marks and that other factors, mentioned in previous sections, played a major role with regard to these final results. To conclude, more research has to be carried out and newer technologies will have to be used in order to study the effects of CLIL in tertiary education but more time will also be needed to adapt to this new framework in the near future.

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