Success at Teaching English and Spanish for General and Specific Purposes to Engineering Students

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Abstract - This paper will give an overview concerning the system of teaching two world languages - English and Spanish - to both undergraduates and postgraduates studying at three of the faculties of Brno University of Technology. The topics dealt with will focus upon the importance of integration of languages and engineering education with special regard to the international mobility of technically-oriented students and also with particular regard to the importance of the standardization of language teaching in accordance with the Common European Framework of Reference for Languages. The paper will concentrate on the use of information technology in the learning and teaching of languages and on the significance of language teaching for specific purposes. The methods used to compensate for the low study load will be mentioned. Spanish will be commented upon in greater detail with respect to motives for studying, aims, contents, evaluation of the courses, feedback from exchange students, and plans for the future.

Index terms - English and Spanish, international mobility, language for specific purposes, standardization

I. Standard courses in English
The Department of Languages, of the Faculty of Electrical Engineering and Communications of Brno University of Technology (BUT), offers standard and specialized courses (one- or two- semester) in English for students of electrical engineering, computer science and management, all with regard to the LSP (Language for Specific Purposes).

1. Standard courses in English
Since the last academic year, standard pre-intermediate, intermediate and upper-intermediate courses in English have been based on New International Express textbooks – new edition (2005) - which seem to be optimal for our purposes combining general English and the professional situations. This new course introduces up-to-date topics, is time-efficient, student-centred, and focused on real communication skills for engineering jobs, socializing and other real-life professional situations which our students, future engineers are likely to face.

As the study load in the field of foreign languages is comparatively low at BUT, all students need to make use of e-learning by way of compensation. Their self-study has been enhanced by electronic materials (general homework and technical texts).

The homework is always related to the points of grammar and vocabulary of the individual units of New International Express. There are 10 pieces of homework per semester the mastering of which is checked in a special cloze test forming part of the semester testing.

All students are also expected to cover 3 large technical texts per semester which are relevant to their branches of study and are accompanied by comprehension and vocabulary tasks and keys, all accessible on the web. These technical texts should serve as a form of training for exams in standard courses which consist of a listening part and of reading a technical text with tasks. All e-learning materials have been prepared by the staff of the department. A group of teachers, to plan and implement, creative, interactive, electronic English materials has been appointed recently.

II. Specialized courses in English
With the increasing English language competence of students entering the faculties of BUT, the Department of Languages decided to meet their demands by offering optional specialized courses in addition to the standard courses. Advanced students who have successfully completed either an intermediate or upper-intermediate course within the department, or have passed a certified exam in English, externally, are welcome to enter the specialized English courses designed to improve and cultivate their specific language skills, or they may take the option to start studying another language (German, Russian, or Spanish).

Currently the following specialized courses in English are available within our Department of Languages, the first five with the pre-requisite of an intermediate level of English:
• Business English
• Everyday Conversation (taught by a native speaker)
• Professional English
• Specialized Course in Reading Skills (a text-oriented course tailored to the needs of technical students offered
by the author of this paper: more about its place in the credit system, its main purpose, short-term and long-term aims, needs analysis and feedback evaluation, evaluation of students' progress, course design and materials design, and a wide variety of skills and sub-skills introduced with the aim of improving technical students' competency in English, as well as information about innovations of the course as far as the contents and materials are concerned, can be found in [1] and [6].

- **English for Postgraduate Students** (a specialized English language course that aims at training the candidates in all skills that are indispensable for managing the English language part of the Ph.D. examination).
- **Professional English for students of the FBM** (specialized tuition for students of the Faculty of Business and Management (FBM) at Brno University of Technology has been introduced: students of the first year of the Management Informatics branch study Professional English tailored to their needs in two-semester courses at three levels - pre-intermediate, intermediate and advanced)
- **English for Europe** (will be launched as a new option commencing in the coming academic year 2006/07)

More detailed information concerning the organization of the language teaching programmes provided by the Department of Languages, as part of Bachelor's, Master's and Ph.D. study programmes, at the Faculty of Electrical Engineering and Communications (FEEC), Faculty of Information Technology (FIT) and the Faculty of Business and Management (FBM) can be found at [www.vutbr.cz](http://www.vutbr.cz).

Registration for all language courses is done electronically in the Information system of each particular faculty. Students of the first year of the Bachelor's programme are obliged to fill in an electronic English Placement Test [www.vutbr.cz/jazyk/](http://www.vutbr.cz/jazyk/). The registration for the courses is then based upon the result of this test.

**SPANISH**

We live in an era of enormous intensification of international communication and the ever increasing number of technically-oriented university students who want to register for Spanish courses shows their awareness of the fact that one foreign language (currently, English, compulsory for students of the FEEC, FIT, and FBM, being the most frequent and relevant language in the fields of IT, electronics, business, etc...) is not enough language knowledge for an expert, businessman or researcher who is intending to work, or is working internationally. (Discussion of making two foreign languages compulsory for students of the FEEC is currently under way.)

**I. The motives**

The main motives of our students for studying Spanish are (based on an enquiry conducted in their very first Spanish lesson) the following:

- the huge number of people speaking Spanish and its universal character
- the chance to participate in the Erasmus/Socrates programme and study at Spanish speaking universities, and thus, gain both academic and personal experience abroad (an academic aim)
- advantage of speaking another world language for the future professional career (a professional aim)
- awareness of the fact that, apart from Spain being an important Member State and Spanish one of the main/official languages of the European Union, there is also an economic potential in Latin America
- personal motives (friends, relatives in Spain or Latin America, interest in Hispanic culture)

**II. Types of courses**

The following paragraphs of the paper review the current situation in the Spanish section and summarize the experience of more than 12 years in which the Department of Languages has been providing two Spanish courses to students of the Faculty of Electrical Engineering and Communications as well as to students of other faculties of BUT, where the option does not exist, namely: SP1 – an elementary course (curso de nivel inicial) and a follow-up – up SP 2 course (curso de nivel medio bajo), each two semesters long and worth 6 credits.

In both 2004/2005 and 2005/2006 three courses of elementary SP1 and one course of SP2 were opened.

Students enrolled on the Spanish courses are assessed using a system of continuous evaluation – each semester is completed by a test and the course is completed by a three-part examination.

**SP1 course**

The main objectives of the elementary course are mastering Spanish pronunciation, basic grammar and the vocabulary of everyday situations, comprehension of simple oral and written messages, creation of simple oral and written messages, and the use of elementary technical terminology. The course should equip students with Spanish for survival so that they could manage everyday situations (transport, accommodation, getting around, important signs, numerals, etc.) but also be familiar with basic Spanish terminology related to electrical devices, laboratory equipment and the information technology they are likely to come across within the Spanish-speaking academic environment.

An evaluation, in the form of a written test conducted in the last session of each semester - 40 items covering grammar and vocabulary - should be completed in 45 minutes.

The final exam in SP1 course has three parts: reading a general text accompanied by tasks, listening to a CD recording with accompanying tasks and an interview with the teacher covering topics dealt with in the sessions (20 points maximum...
for each part gives 60 points altogether + 40 points maximum for two semester tests - 20 points maximum each - gives a total of 100 points maximum of the entire course evaluation)

**SP2 COURSE**

The main objectives of the lower-intermediate course in Spanish SP2 are a continuation of studying general Spanish at a higher level and an introduction of fundamentals of Spanish for Specific Purposes.

The SP2 course has been enriched with technical texts downloaded from the Internet and/or texts from professional journals with the topics: electronics or IT (sistemas inalámbricos, células solares, display gigante, generador de sonidos para juegos electrónicos, or el sistema de cómputo para automóviles), simplified and equipped with adequate tasks produced by the author of the course (True/False, multiple choice, comprehension questions, etc.), texts and tasks in which students should learn specific terminology and the character of technical Spanish.

To increase motivation, SP2 students are occasionally exposed to visits of native speakers, usually from Latin America, e.g. a very successful example was a presentation on past and present Czech-Mexican relations followed by a discussion. [5]

More detailed information about the programme, syllabus, aims and contents of both Spanish courses can be found in [2], [3] and [4].

**III. Materials**

In both SP1 and SP2 class sets of original Spanish communicative textbooks are combined with Czech-Spanish manuals for self-study and by original Spanish audio- and video- courses, which should help students achieve better orientation in authentic Spanish and information about social life and cultures typical of Hispanic countries. These are usually equipped with vocabulary and other tasks, made by the author of this paper, who is responsible for Spanish courses. Moreover, the students can borrow the magazines subscribed to by the department (Todos amigos, Muchachos and similar) or periodicals brought back to the department by students returning from their stays in Spain.

**IV. Other activities**

Apart from the regular lessons the students receive information concerning exchange programmes, summer courses for foreigners in Spain, relevant websites for self-study and activities of Instituto Cervantes. Whenever in need, the students can get help with various Spanish applications and other documents indispensable for their study or work abroad, as well as information about the possibility of entering preparatory courses for the internationally accepted D.E.L.E (Diploma Español Lengua Extranjera) certificate organized outside the faculty, as for the time being organization of such courses is beyond the capacity of our department.

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**INTERNATIONAL MOBILITY**

The Spanish courses have a special significance concerning international mobility, as the study stays of our engineering students and doctoral students at Spanish universities within the framework of Socrates/Erasmus and other mobility activities include subjects taught in English, as well as lectures held in Spanish. Moreover, the grantees at Spanish universities need elementary skills for communication in Spanish for everyday life.

Since 2002, 4th and 5th year - students of the MSc. study programme or Ph.D. students of the FEEC, FIT and FBM of the BUT have entered an exchange programme and studied at host universities in the following locations:

1. Universidad de Cantabria, Santander, Spain
2. Universidad de Valladolid, Spain
3. Universidad Politécnica de Valencia, Spain
4. Universidad de Zaragoza, Spain
5. Universidad de Rovirí y Virgili, Taragona, Cataluña, Spain
6. Universidad Técnica Federico Santa María, Santiago de Chile, Chile [8]

In the academic year 2004/05, a questionnaire created by the author of this paper was sent through electronic mail to all the grantees who had attended the SP1 or SP2 courses before their stay abroad in the above-mentioned locations. All polled students responded during or after their stay - the rate of return was 100%. The following are the results of the enquiry:

Their stay usually lasted three to twelve months. They either studied certain subjects (usually 5 subjects) relevant to their course of study at their home university and were allocated a certain number of credits transferable within the European System of Credit Transfer or worked on their diploma or dissertation theses, in some cases with one or two subjects added. The tuition, in technical subjects offered in English or Spanish, was a significant advantage for those students, who had allocated their time to the study of both languages at the Department of Languages. All students took the opportunity to attend a free or paid, usually certified Spanish course in Spain and some of them compared both systems and informed the author openly about the differences, which contributed significantly for amendments of the Spanish courses at the Department of Languages. Some of the students also informed the author about pieces of grammar or vocabulary or structures that had not been included in SP1 or SP2 and had proved necessary abroad. All students, however, expressed their conviction that the Spanish course they had attended before leaving for Spain, or Latin America, was essential for their orientation in social life and academic activities.

Such substantial feedback from those who studied and gained experience in Spain and Chile has helped the author to adapt both courses to better meet the needs of the newcomers -

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potential future grantees. As this way of inquiry proved to be highly efficient, the author considers it worth repeating on a regular basis in the future.

For the academic year 2005/06 bilateral agreements within Socrates/Erasmus have been concluded
- between the FEEC BUT and Universitat Rovir i Virgili Tarragona, Universidad de Zaragoza, and Universidad de Cantabria, Spain
- between the FIT BUT and Universidad de Valladolid, and Universidad Politécnica de Madrid, Spain, which will enable more students to enter the exchange programme and pursue their studies and personal development. Hopefully, the trend will continue.

**SPANISH FOR SPECIFIC PURPOSES**

There is a close connection between the international mobility and the insertion of Spanish for Specific Purposes to the programme. All students are encouraged to study technical terminology necessary for life at universities in Spain, such as names of devices, buttons, controls, maintenance and warnings: instrucciones, diferentes controles y botones básicos y sus nombres, tipos de pilas, fuentes de alimentación, mantenimiento y especificaciones técnicas de aparatos, el mando a distancia, precauciones

- to achieve familiarization with Spanish IT terminology: tecnologías de información, ordenador, error, contraseña, red, correo electrónico, pantalla, teclado, disquete, impresora, disco duro, ratón, procesador de texto, documento, página web, interfaz, sistemas operativos, descarga

And students of the SP2 course are helped by being provided with simplified technical texts
- to get basic terminology concerning environment, energy sources, re-cycling, and pollution: fuentes de energía, contaminación, capa de ozono, medio ambiente, pesticidas, cambio climático, sistemas de calefacción, medios de transporte, consumo de electricidad y agua, reciclaje de las basuras y otros asuntos ecológicos
- apart from more advanced IT terminology: desarrollo de la Sociedad de la Información, interactividad con el usuario, autenticación, internauta, navegador, bloqueador, criptografía, comprimir, foros de opinión, archivo adjunto, etc.

**LANGUAGE STANDARDIZATION**

The Department of Languages stresses the importance of language teaching standardization based on the Common European Framework of Reference for Languages (Marco común europeo de referencia para las lenguas) a document, which provides ‘a practical tool for setting clear standards to be attained at successive stages of learning and for evaluation of outcomes in an internationally comparable manner. The Framework provides a basis for the mutual recognition of language qualifications, thus facilitating educational and occupational mobility.’ [9]... ‘The Framework facilitates a clear definition of teaching and learning objectives and methods and provides the necessary tools for assessment of proficiency.’ [9]... ‘It is of particular interest to course designers, test designers and teachers.’[9] – the three roles the author of the Spanish courses is well acquainted with.

The author being aware of the importance of language teaching standardization based on the Framework is gradually going over to Spanish materials that apply its recommendations: textbooks and videos that should lead the students to the A1/A2 level in the elementary and A2/B1 in the follow-up SP2 course of Spanish.

It was in the 1st conference of associations of Spanish teachers in Toledo, Spain in 2005, more in [3], at which the author received several sample copies of different Spanish textbooks corresponding to the Common European Framework of Reference for Languages (ECO 1, Español en Marcha 1, Ven Nuevo1, Profesionales 1, y Es negocio 1) and has since been comparing them in order to introduce the most suitable additional textbook. She has come to a conclusion that Español en Marcha seems to be the most suitable for the set purposes. It is a new course aimed at young and adult learners and its method consists of four carefully graded levels which correspond to the Common European Framework of Reference for Languages. Español en Marcha 1 covers A1/A2/B1 levels. It seems to be suitable for SP1 and SP2 as it is a flexible course of 40 to 80 class hours depending on the needs of students and on whether all the supplementary material is used. It contains a variety of activities which can be adapted to different teaching styles. The student’s book contains 10 units organized by topics, pair-work activities providing oral practice and cultural contents of the Spanish-speaking countries. The teacher’s book contains five extra consolidation units and some photocopiable tests and other photocopiable material, which is a great help in case students cannot invest money in workbooks. This academic year the author has already been using Español en Marcha 1 CDs for Spanish listening training in SP1 as they contain excellent listening comprehension activities.

Complementary videos corresponding to levels A1/A2 have been used in both Spanish courses, namely the video course Apartamento ParaDos.

**LANGUAGE COMPETENCE AND EMPLOYMENT**

The above-mentioned system of validation of language competences is closely connected to future career opportunities in the European Union, where certificates proving certain levels (A1/A2/B1/B2 etc.) will serve as necessary tools for the assessment of proficiency, also in case of our students who welcome the opportunity to enter a temporary job during their studies with a chance of staying after graduation in a permanent job in Czech or international companies that cooperate with Spanish or American companies.

As a good knowledge of two official EU languages will be indispensable for a successful career [10], the author intends to provide basics of business/professional Spanish as
an innovation of SP2 in the next academic year and thus increase students’ chances to gain employment in the EU or in the Spanish speaking world. The author’s intention is to use the Profesionales 1 Spanish course (with a CD) which corresponds to the A1 and A2 levels of the Framework, probably in combination with the Spanish business course called Es negocio (with a CD) created in the context of the Framework.

**COMPUTER-AIDED LANGUAGE STUDY**

Another aspect worth mentioning in this paper are the activities aimed at bridging the gap between traditional classroom materials and Internet-based learning resources. In both English and Spanish the study load of our technical students is unfortunately very low, that is why electronic self-study materials are a great help because our students are familiar with and used to computer-guided study.

In the field of Spanish the following examples of IT could be mentioned as an aid in teaching and learning the language:
- The possibility of revising general Spanish using *sample tests* put on the Internet by the author
- A *questionnaire* sent by electronic mail to students during and/or after their study stay in Spanish-speaking environment, 100% of them responded, a very useful feedback, will be repeated the next academic year
- A system of electronic graded *self-study technical texts* has been introduced in the English section, the author’s intention for the near future is to put Spanish electronic technical texts on the web in a similar way
- VEKTOR-Spanish Connections - a *multi-media language study system* that can be reached from the faculty computer centre (an English version of VECTOR is also available there)

**PLANS IN THE SPANISH SECTION**

To increase the level of students’ comprehension and communication skills in preparation for employment in the engineering industry, the author would like to introduce/provide
- basic elements of business/professional Spanish into the SP2 course in the future
- adaptations of courses in accordance to the recommendations of the Common European Framework of Reference for Languages (recomendaciones del Consejo de Europa titulado Marco común europeo de referencia para las lenguas: aprendizaje, ensenanza, evaluación.) to levels A1 hasta B2
- more electronic texts for self-study
- installation of more multi-media courses in Spanish – currently our students can use VEKTOR-Spanish Connections only
- more information to for students interested in D.E.L.E examination leading to obtaining an international certificate in Spanish
- more information concerning relevant web sites for self-study

**CONCLUSION**

The author, a teacher of English and Spanish, is convinced
- that in case of students who are preparing themselves for technically-oriented jobs the mastering of English and Spanish as part of engineering education will be advantageous as it might make it easier for them, experts at electronics, programmers, businessmen or researchers to work within the vast English- and Spanish-speaking world.
- that adjusting the courses to the Common European Framework of Reference for Languages will help to ensure that the educational and professional qualifications of the students will be properly recognized in the EU, and
- that technicians prefer and need different teaching methods/learning strategies (more surveys of grammar, tables, etc.) than ESP users in humanities do and that the teaching methods should reflect this

The author believes
- in integration of communicative and non-communicative methodologies – after a boom of the purely communicative approach
- and in methods used to achieve enhanced motivation in students (the use of the Internet, continuous study evaluation, visits of native speakers)

Finally, the author believes that the ideal products of the tuition at BUT should be informed, thoughtful and skilful professionals (BSc., MSc. and Ph.D.) equipped with a good knowledge of preferably two foreign languages in all four skills (apart from having professional excellence, business ethics and the environment of this planet in mind).

The author is the Head of the English and Spanish sections of the Department of Languages.

**REFERENCES**


