

# How to Integrate Foreign Language Teaching into Professional Subjects

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**Abstract.** *This paper deals with implementation of the Bologna Process into the professional study programme at the Polytechnic of Zagreb, Department of Electrical Engineering regarding students' employability, and mobility. Their lack of fluency and the recommendation of at least two foreign languages for the future graduates, who intend to study and work somewhere in the European Union, is underlined as an obligatory prerequisite. Special teaching materials, methods and ideas how to integrate foreign language teaching into professional subjects are mentioned. The research dealing with the students' opinion on that matter was carried out. The number of the students (professional and specialist study course) included in the research was 210.*

**Keywords.** foreign language integration, professional subjects, mobility, employability, ICT tools

## 1 Introduction

Even before the Bologna Process objectives regarding foreign languages were discussed and presented, the necessity for a universally accepted and used language throughout the European Union was recognized.

To meet these requirements and make Croatian students ready, particular attention has been paid to materials and teaching methods. In that respect, online learning and teaching has been of great help. New methods and the use of computer laboratories increased students' interest and motivation. Students have become aware that the knowledge of foreign languages will open them the door to the European labour market. Their competitiveness in the process of mobility and employability will depend not only on their graduation degree but on their foreign language skills and competences as well.

## 2 Timeline

English teachers, and not only they, have always used some kind of technology. Earlier technologies,

if carbon sheets, mimeograph, and a typewriter are generously given that name, cannot be compared to today's technology [4]. They are miles away!

Today's technology includes audio and video equipment, computer technology, cameras, overhead projection devices, scanners, printers, CD equipment. To create meaning, today's teachers use almost any device that can access, present, manipulate and communicate words, sounds and images. The explosion in digital technologies has opened up new and exciting possibilities. Thanks to the good and successful cooperation between engineers teaching professional subjects and English teachers in the Department of Electrical Engineering learning, testing materials and methods have changed and improved the outcome.

One of the most time-consuming activities, i.e. continuous monitoring of the students academic performance required by the Bologna process has been drastically reduced [3]. Frequent tests and examination papers, either short or long, led to the growing number of hours necessary for preparing and correcting them. Here, the computer laboratory, the advice of colleagues as well as the software created, helped language teachers fulfil the terms of the Bologna Process. Integration of computer technology has opened its door widely for all those who were ready and prepared to make use of it and profit of its features and various possibilities. The idea to work together and to integrate English language into the professional subjects soon found like-minded teachers. It was the first step in the right direction.

## 3 Language in professional subjects

To be ready for the process of mobility, the undergraduate student needs to master at least one foreign language. Trying to figure out how to monitor students' assessment as well as their growing readiness for the important features of the Bologna

Process, an analysis was carried out based on students' opinion. It was also important to make the second step, i.e. find out what students think about the importance of learning foreign languages and its implementation in professional subjects.

A questionnaire was given to the first, second, and third year students and to some specialist study course students of the Department of Electrical Engineering. One of the questions was: "What pages do you read?" Table 1 shows the answers given by 210 students. Internet has a large number of social activity services such as *facebook*, *twitter*, *orkut*, *hi5*, etc. Every self-respecting web-portal has its own forum, and online forum communities are extremely popular, especially among young people. All these sites are grouped in a category called social sites. There is no doubt, whatsoever, that students search the web, read English pages, and communicate in English. For the Bologna Process requirements, the level of both spoken and written communication should be increased. Based on the answers given in the questionnaire, higher semesters and specialist study course students share that opinion.

Table 1: Most visted contents on the web

1 <sup>st</sup> semester	1. news 2. social sites 3. music
3 <sup>rd</sup> semester	1. news 2. video 3. social sites
5 <sup>th</sup> semester	1. news 2. EE related sites 3. social sites
specialist study course	1. news 2. EE related sites 3. social sites

Internet contents concerning different fields of electrical engineering (electronics, communication systems, electric motors and generators, power electronics, etc.) are grouped in the electrical engineering (EE) related sites and these sites offer excellent professional materials. Since these sites are actually the names of different professional subjects in the Department of Electrical Engineering, reading those students get easily acquainted with professional terminology.

While analysing the questionnaire results, it was obvious that the students of lower semesters avoid EE related sites admitt that they are not able to do so, either due to their poor knowledge of English or the lack of professional knowledge. Although the students' language competences are inadequate in their first year of study, the awareness of connection between English language and electrical engineering

rises in the second and third year. The percentage of the students who answered positively to the question: "Do you think English language should be introduced in the third year as an elective subject?" varies by 11 % from the third to the fifth semester, as it is shown in Figure 2. The students do not know how small thier professional knowledge is untill the 5<sup>th</sup> semester.

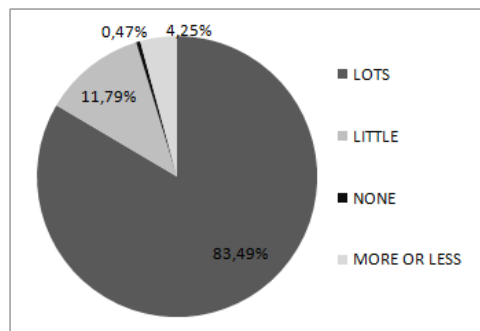


Figure 1: Percentages of students' answers regarding Importance of English for web browsing

As students improve their competences in English and acquire more professional knowledge their interest is transferred to more professional contents. This also emphasizes the relationship between language skills and increased interest in the fields of students' future profession. Their access to information is enhanced and the sites containing their professional interest are easier to locate.

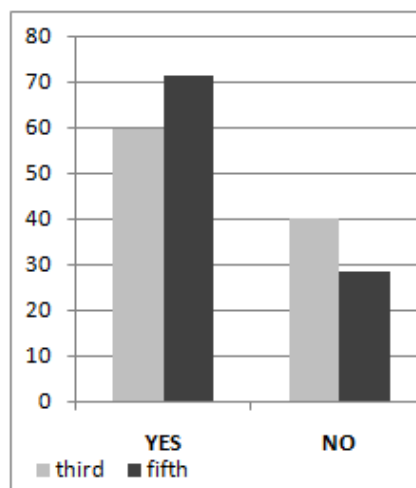


Figure 2: Students' answers to the question 'Should English be an elective in 3<sup>rd</sup> year?'

The question: "How much time do you spend surfing the Internet every day?" is answered with an average of 3 hours a day. In higher semesters students' interest is in favour of professional topics, i.e. the higher the semester the more time they

spend on electrical engineering related sites, rather than on social sites. Students find them very useful and worth dealing with. Based on this analysis, it becomes obvious that the integration of English into professional subjects in electronics, and electrical engineering should be increased. The necessity of improving students' language skills has resulted in their initiative to ask for the introduction of a new elective subject, i.e. professional English in the sixth semester.

### 3.1 Drills, assignments and exercises

Besides encouraging students to use the English electrical engineering related sites on the Internet, which means reading the texts and getting informed - more or less a passive activity, English teachers try to step up their level of language fluency and give them different assignments related to the professional subjects.

Students are asked to give presentation as a part of their oral examination. They have to choose one of the titles from their English textbook or a professional subject, make a computer presentation in front of the colleagues and answer questions from the audience. They also write the summary of the material they are going to present and distribute it to the audience. During presentations only hints are allowed on the screen, presenters have to make sentences out of them, discuss the slides with the colleagues giving them a short lecture on a professional topic. As students improve their competences in English and acquire more professional knowledge their interests is transferred to more professional contents. This also emphasizes the relationship between language skills and increased interest in the fields of students' future profession. Their access to information is enhanced and the sites containing their professional interest are easier to locate. Some professional subject teachers have introduced English into their lectures and exercises. Students are first asked to search the EE Internet sites in English, of course, then an introduction into the subject is given either orally or by means of a computer and the relevant terminology is pointed out. Definitions and important notions concerning the professional topic are also presented depending on the teacher's choice and the students' ability to understand the explanations in English.

The next step in integrating English and the professional subjects is the activity in PC laboratories. Students are given different exercises which improve students' professional knowledge of English, their grammar and glossary increase and make them more prepared for the challenges imposed by the Bologna Process. The problem for English teach-

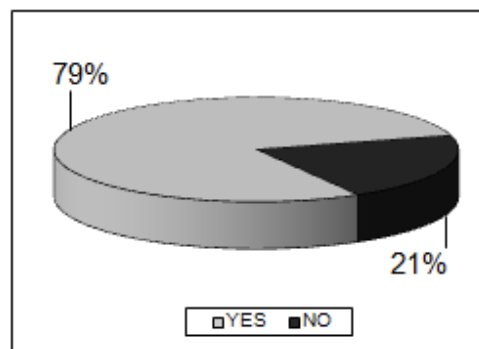


Figure 3: Students' answers to the question: 'Do you find exercises in PC-lab helpful?' (In percentages)

ers here is the software. They are not trained to write computer programs, but the programmers are available at the institution. The programme is well designed and should be foolproof, so the need for programmers' assistance is reduced to minimum. The English language web site of the Department of Electrical Engineering consists of drills and exercises (with keys) designed especially for the students of electrical engineering for self-study access. Students can always find some time during the day to enter one of the PC laboratories and do some exercises designed for them and available at any time.

There are other possibilities regarding students' use of PC laboratories for drills and exercises. Periods during the week are set to allow direct communication between students and teachers who help them work on the material which is either difficult or when students cannot decide what is suitable for their learning programme.

### 3.2 Questionnaire results

Answers in the questionnaire expressing students' opinion about ICT implementation and their intention to use these tools in their own personal advancement are of special interest here. Figure 3 gives the distribution of students' answers to the question: "Do you find exercises in PC laboratories helpful?" Although students are given the possibility to improve their English at home, Figure 4 shows the percentage of the students that have (or have not) tried to perform PC based exercises at home. According to the students, the problem is a lack of time, (Figure 5). Students point out their preoccupation with studying professional subjects which are often more demanding and time consuming than English.

There are other answers from the questionnaire which should be mentioned here although they are not so closely related to the title of this paper. Nevertheless, they give an insight into the problem of future professionals and their problem of language

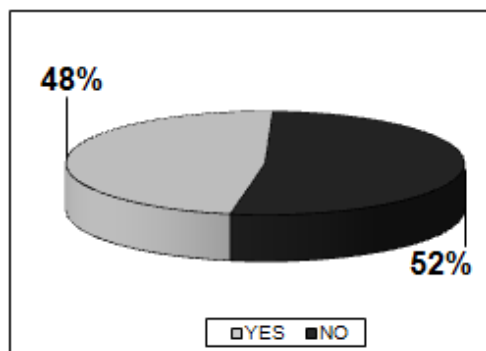


Figure 4: Students' answers to the question: 'Have you done PC-based exercises at home?'

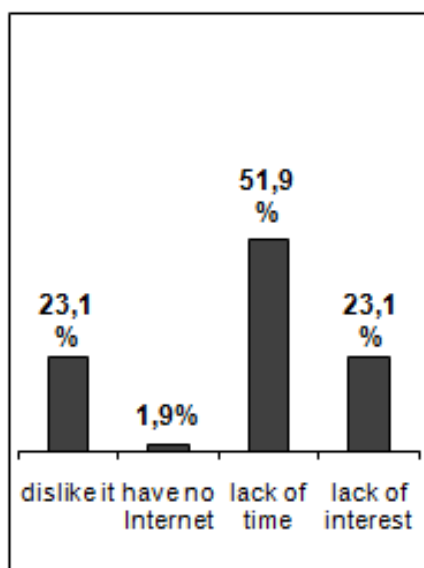


Figure 5: Students' answers to the question: 'Why did you not do PC-based exercises at home?'

competence. Textbooks used in high schools are not written for the language problems of Croatian students so 83% of the students find grammar revision during the first and second year very useful. It is important to point out that only chosen grammar sections are revised, sections that help students master English for specific purposes.

More than 70% of the students think that 120 lectures/exercises of a foreign language in Higher Education Institutions in Croatia English is not enough. Moreover, in their opinion not only the number of lectures should be increased but they are convinced (56,3%) that two languages would make Croatian undergraduate competitive on the EU labour market.

## 4 Conclusion

Counselling in small groups, establishing good relationship between a foreign language and other

professional subjects are teaching strategies which bring several benefits to both students and teachers. For students, computer technology means increased motivation, significant amount of reading material, something that is in, popular, something they like; therefore they are more successful and willing to learn. It helps students produce great published material for their essays, seminars, thesis, etc. As for teachers, production, storage and retrieval of materials is easier, finding information is just a click away, integration of communication technology is a good and valuable assistant for good teaching.

Analysis of the questionnaire shows that the integration of foreign language teaching into professional subjects can have at least two significant benefits. If language learning is implemented in professional courses, students will have to learn in English which can only help their performance. In so doing, their language competencies and their professional knowledge will run parallel to each other. The importance of integrating foreign language teaching into professional subjects is immense. It increases students' language skills and competences and leaves students more time, which could be used to study a second foreign language and face the challenge of the Bologna process regarding foreign languages completely. Connecting professional vocabulary in language drills and exercises and using it in lecturing professional subjects improves students' knowledge and their ability to be critical readers and viewers of such texts. Therefore, students should be encouraged to make use of the ICT in their professional study as well as in learning of the foreign language. If the use of the professional Internet sites is greater, the opportunity to improve one's fluency in English is greater, thus improving one's job prospects, i.e. one's mobility and employability, particularly in English-speaking countries.

One of the things the teachers can do in order to motivate and stimulate the students and which is implemented in the Department of Electrical Engineering is a counselling group within the subject Integration of the Communication Systems, consisting of maximum 20 students during their last semester. The counselling would give them advice concerning the use of a foreign language for writing papers, abstracts, articles and even BSC thesis. They would be given instructions how to write covering letters for job application, CV and how they should present themselves at interviews. Sometimes, job advertisements are written in a foreign language, and during interviews applicants are addressed in a foreign language, mostly in English. Therefore, English may be considered the first language of the professionals.

A good knowledge of English certainly brings

numerous benefits, such as higher grades, more ECTS points, and better opportunities for employment. If students hand in their written assignments in English, if they write and defend their BSC thesis in English, their mobility and employability will be substantially increased. The last level of integrating foreign language teaching into professional subjects would be teaching professional subjects in a foreign language. At first one or two professional subject topics in a foreign language, one or two lectures. The above refers to the teachers, while students' major achievement would be writing their BSC thesis and defend it in English.

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