HOW TO FOSTER STUDENTS STUDY ACTIVITY VIA ICT AND REAL PROJECTS

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Abstract. *Nowadays, the experts in various fields of technology are on a high demand. It comes without doubt, that their skills can be better disseminated via their good language competence – the higher the language competence the better. One of the ways to ensure a quality training of future professionals at engineering universities for being prepared to operate industry or business sector is to support the language training by ICT and project work. The paper is focused on making familiar with ICT implementation and the activities related to two projects at the Slovak University of Technology, Faculty of Materials Science and Technology, mainly in the fields of the English language and the study programmes at Institute of Applied Informatics, Automation and Mechatronics and Institute of Production Technologies. Regarding the English practitioners, and due to excellent interdisciplinary cooperation with the aforementioned Institutes, the students have been involved in two specific projects utilizing technologies, one of them concerning the developing of on-line conferencing skills in the project titles as "Student on-line conferences of STU MTF (Slovakia) and University of Niš, Faculty of Electronic Engineering (Serbia) for the purposes of English language and other skills development", and the other one on boosting the vocabulary background within their study programme. Regarding the latter, the paper is aimed at looking closer at the prepared multimedia textbook within the project "University text-book: The means of automated production by interactive multimedia formats for the Slovak University of Technology in Bratislava and Technical University in Kosice".*

Key words: *language competence, ICT, projects, interdisciplinary cooperation*

1. INTRODUCTION

When we speak about foreign language teaching at Slovak universities (i.e. non-philological institutions), its development has been probably similar to the situation in many European countries. Since 1989 it has been gradually changing: from total refusal of obligatory teaching of the Russian language and very limited choice of other foreign languages, through extreme boost of just English and neglecting other languages, to the balanced variety of all. These days, the situation is more than critical and calling for changes in teaching languages as many universities have lowered the load of lessons in foreign languages teaching, some language teachers were dismissed and some others allotted to subject-specific departments. In case of sudden necessity the universities rather outsource the lessons and teachers via Language Centres operating for more faculties than utilise the expertise of in-house practitioners – this obviously does not meet the

requirement of quality and continuity. Reasons? It is said that those are mostly financial ones. This also means that the network built by enthusiastic language teachers in 90s with great support of the British Council and USIS is now almost gone.

At our workplace – Slovak University of Technology, Faculty of Materials Science and Technology (hereinafter referred to only as STU MTF), currently only the English language is taught, the load of English lessons has been limited to just two semesters, and the number of staff has been decreased to three people. Nowadays, ICT are an inevitable part of education, at technological universities in particular. Nevertheless, they are sometimes overestimated as the use of ICT is not self-salvation and just the utilisation of it does not make the lesson efficient. Its use should be balanced with respect to the content and context so that the students but also teachers are not sometimes 'over-PowerPointed'. The right knowledge and use in ICT is of course very useful when it comes to student mobility – STU students have participated in mobility programmes in various European Union member countries participate including Germany, Russia, Spain, Finland, or Denmark, where mastering e-learning is required for the university study. This surely calls for developed ICT skills, as well as for enhancing e-learning skills also within English for Science and Technology (EST) language training, i.e. the implementation of ICT. Courses in all subjects at STU MTF, not only that one of EST, are built on thorough needs analysis carried out by the experts of individual Faculty institutes and departments while considering the requirements of the job market and the national/regional needs as well. Obviously, the syllabi are continuously innovated. In 2015, STU was subject to new accreditation which meant a lot of discussions on one hand, but closer cooperation and enhanced implementation of ICT on the other hand.

In this paper the authors try to present how to foster students' activity while utilising information and communication technologies (ICT) and projects.

2. NEW SITUATION

As a result of the new accreditation at STU MTF, the English language teachers now face the question how to achieve corresponding language competence within two semesters left for bachelor study.

The concept of English for Science and Technology (EST) taught at STU MTF was developed in the early 90s regarding the thorough needs analysis of students' needs on one hand, and the requirements from industrial practice on the other hand. Similarly as other syllabi, also the one for EST is regularly updated reflecting the current development and innovations. Therefore, the language teaching is closely related to subject-specific teaching and the language teachers did their best to understand what is taught by other teachers at the subject-specific departments, i.e. they visited their workplaces and laboratories, tried to comprehend the functions of related equipment, basic operations or technology procedure which was very useful as the language teachers could then refer to real facts in teaching EST. Together with focus on culture, awareness of cultural differences and tolerance, such knowledge is the main prerequisite for mastering the university study abroad.

3. GENERAL REQUIREMENTS

Although secondary school students are skilled in using various gadgets, they usually enter the academic environment with low e-learning experience. Therefore, they have to get familiar not only with the e-learning environment but also with e-learning techniques, as STU MTF study materials are mostly available only in an electronic way. The bank of study e-materials is located in an Academic Information System which also records the study achievements and offers, and provides the channel for teacher-student communication.

4. TECHNICAL REQUIREMENTS

When speaking about ICT, both STU MTF teachers and students are able to make use of computer-aided teaching/learning as much as possible quite efficiently (Dashtestani and Stojković, 2015). These ICT teaching/learning possibilities are not only friendly in terms of time saving, but also they are cost efficient (e.g. delivery of the training materials for large groups of recipients in distant study form). Following are the two examples of efficient ICT utilisation at STU MTF in Trnava:

4.1. Online testing

This online testing system at STU MTF utilises Microsoft ASP.NET Web Matrix application (Mironovová, Chmelíková and Fedič, 2010) and could be used by any language teacher from the Department of Languages. The registered teacher enters the system and assigns tasks, questions, or specifies answers/solutions. S/he also defines the period of test availability and functionality and the rest is done by the testing system itself. The system evaluates the students' tests automatically, their results are recorded and compared. The system can process the lists of students according to their score and the forms of study (full-time, part-time) at the same time.

4.2. Virtual laboratories

Regarding an example from a different field, automation industry is an area requiring high level of human work effectiveness and innovations, and it has been investigated within several projects. One of those was oriented to a general model of a robotic workplace (Božek and Chmelíková, 2011) which could possibly be used for teaching at other universities as well.

STU MTF teachers deal with the technical background seriously, so that the students have the best possibilities at their disposal – the seminary rooms, lecture theatres, multimedia classrooms, PC pools were innovated and equipped with modern ICT technology, mainly thanks to European funds and projects. In other words, each teaching room has a PC, data projector, and a screen. A printer and a copier are available as well.

4.3. E-learning

Many students are experienced in using various gadgets, nevertheless, their competence in e-learning is sometimes quite low. The priority is to make the students acquainted with the e-learning possibilities and introduce them to e-learning techniques as the majority of STU study materials are mostly available only electronically as they can be easily updated and upgraded.

5. STU MTF INTERDISCIPLINARY PROJECTS – EXAMPLES

There are several interdisciplinary projects at STU MTF in Trnava, we provide two examples in which the students – either undergraduate or postgraduate are involved.

5.1. Student online conferences of STU MTF (Slovakia) and University of Niš, Faculty of Electronic Engineering (Serbia) for the purposes of specific English language and other skills development

Many EU countries do not really spend much money on doctoral students' skills development no matter what their language or ICT skills are. The finances of educational institutions are constantly lowered, thus the chances of PhD students to attend prestigious international scientific events are limited as well. In our project we focused on providing them with an inexpensive platform to train communication and conferencing skills at minimum expenses. Besides, they could exchange their professional knowledge and enrich their international experience before they start regular cooperation in person. The project brought together English teachers, PhD students and young researchers in IT study programmes with similar syllabi, using English for Science and Technology (EST) as a means of communication. The involved students improved their language and communication skills using ICT, strengthened their presentation social and specific technical skills as well as they had the opportunity to chair the individual on-line meetings (Chmelíková, 2015). We provided them also with the real chance to deliver their presentation at an ESP conference 2015, Niš, Serbia.

5.2. University textbook "The means of automated production by interactive multimedia format for STU Bratislava and Košice"

This is another proof of good interdisciplinary cooperation of English practitioners and subject-specific teachers as within the elaboration of the textbook the language teachers could deploy their experience in various approaches to education which provides massive help to our colleagues from IT department. The language teachers are usually more experienced in didactics so they help subject-specific teachers to complement their English versions of the textbooks with appropriate exercises.

6. CONCLUSION

The situation within foreign language teaching has changed and we have to deal with the new situation. The documents issued by European Commission (Council of Europe, 2004) read that the ability to communicate in a foreign language is one of the essential competences not only for the mobility, but also for better employability of university graduates. And what is more, the competence in foreign language is no more understood only as a mastery of one or two languages, but rather as a competence with developed appropriate language register, where all the language skills find their place and meaning. Therefore, interdisciplinary cooperation with subject-specific departments is the right way, one of them being e.g. CLIL (Hurajová, 2015), therefore, the sooner such a cooperation at universities is started, the better. The use of ICT is so obvious that it sounds strange to say the ICT application in education – regardless the expertise – is a must. All university graduates, not only STU MTF ones, face this necessity on a daily basis, and they should

utilise all opportunities to implement ICT in various situations related to their future career during their university study.

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