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Experiences in International Cooperation in Teaching

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Introduction

Teaching is in the frame of EU mostly the responsibility of national educational systems and policies, but more and more are those national systems connected to each other through different ways of cooperation. The most well-known is the European Commission (EC) program Lifelong learning. The EC has integrated its various educational and training initiatives under a single umbrella on which between others the mobility of students and teachers is based (Erasmus program) and is enabling international cooperation in teaching. Very important are also Erasmus Mundus and the EU cooperation with industrialised countries like USA, Canada, Japan, Australia, New Zealand and Korea. One of goals of international teaching cooperation is to meet the challenges posed by globalisation and increasing competition in education. International dialogue, comparison and competition can be strong drivers in enhancing the quality of education systems.

Above numbered programs are mostly mobility programs based on mobility of students and teachers. By students, is taking part in the mobility a personal decision of the student and likewise studying is not necessarily the first priority of the student. For that reason we will concentrate us more on teachers and teaching itself. Teachers' decisions for mobility are also personal, but taking part in international teaching is obligatory if students from abroad are taking part in the course of single teacher.

The University of Maribor as well as Faculty of Electrical Engineering and Computer Science started in 1999 with Erasmus teaching staff mobility. It was our first year in the Erasmus program and we have just few exchanges. For both, teachers and students this was quite a new situation. As teachers, we have been used to have guests for a lecture or two, but the week visiting teachers have been quite a new experience also for teachers not only for students. It was and it is still necessary to organise the teaching in the way, that such an international visitor's teaching is completely integrated into usual course. Behind basic organisation of the visit these demands also good planning of topics. Students must get by the home teacher some introduction into the topic given by the guest teacher and then the home teacher has to prolong at the point where the guest teacher has finished the teaching. The easiest way is to have a kind of isolate topic, where the topic can be included into the course in whatever point and do not need any special introduction or prolongation from the side of home teacher. If the topic demands stronger integration a good cooperation between both, home and guest teacher is needed. While teachers have been cooperating in teaching with each other already for a while and/or also in research we can get the best results.

How students react on such an international cooperation in teaching? According to experiences and students' feedback a lot of parameters (language, preceding knowledge, expert topic knowledge, teaching methods, and approach) have influence on students' reaction from very positive up to very negative. The last one happened mostly if students have language problems or the topic is demanding and also the guest teacher is demanding in the students cooperation and works that students have to do partly additional to the regular work.

One of reasons for students less positive reaction can base also on lack of cross cultural communication. Some of EU countries and most of transcontinental countries are multilingual and especially multicultural; while on the other side we have countries which base just on own culture and students are not aware on the possible influence of culture on teaching. It is not necessary that students can cope with the culture of the teacher. They have to be aware of the problem (cultural awareness) and they should have a basic knowledge of the cross cultural communication and have to be informed of its importance.

Cultural awareness of students is very important especially in cases where students and teachers are not cooperating face to face but only electronically in a

distance and e-learning systems. In such a case student and teacher has probably not enough information about each other and approaches based on different cultural expectations and experiences can cause a lot of communication problems.

Nevertheless, described experiences are not collected only on the home side (host side for guest students and teachers) as it was presented in described cases; they can be collected also on the guest side (guest teachers on partners' institutions).

Indeed, how all works if we are guest teachers in the international cooperation teaching? We are in the position to integrate into guest teaching and educational systems and to cope with students' expectations. Collected experiences are in general mostly very positive. As the most negative experience we would describe non-responding of students on questions and non-participating of students in discussions.

The paper includes besides presented introduction and outline of the work an analysis of experiences in international cooperation teaching, based on academic and virtual mobility, which are shortly presented in the next chapter. The paper will be round up with concluding suggestions how to avoid some of appearing problems.

Mobility

The free circulation of people within the EU and all around the world supported by free labour market as well as different program and projects, has increased student and teacher mobility tremendously [1]. Students and teachers are interested in collecting experiences during single academic period in the following programs: Lifelong Learning Programme Erasmus; Transcontinental programs between EU and other non–EU countries (Canada, Japan, USA, Australia, New Zealand, Korea); Erasmus-Mundus and some bilateral programs, while students are also looking for the work based mobility cooperation [2], [3] in professional environment (Leonardo da Vinci program).

The key objective of numbered programs is supporting the development of innovative action in the member states by promoting mobility projects in the context of transnational partnerships which involve different organizations with an interest in education, training and placements. Transnational partnerships are in this mostly assigning for dissemination of expertise and approaches in the mobility including language and cultural competencies which are oriented on promoting language and cultural competencies in mobility context as well as more general in the society [4], [5]. At the same time the both mentioned, but especially missing cultural competencies, are presented as well like barriers in the mobility.

In our research, we will concentrate us on so called academic mobility, moving of teachers and students between different institutions. Although, that the mobility is first of all planed for students we would like to present teachers' point of view. Special attention will be also devoted to the virtual mobility as a part of academic mobility, which refers to students and teachers to study or teach on host institution for a limited time, without

physically leaving the home institution. Mutual communication activities between teachers and students are possible with the support of information and communication technologies and supporting tools like Moodle, a modular and extensible platform that offers a variety of features to support the educational process and enable distance and e-learning [6].

While we are concentrated on teaching staff mobility, what are major problems in academic mobility, especially in the frame of Erasmus program from teachers' point of view?

Teachers can be involved in three different situations, as teachers at home institution (from students' point of view host institution), teaching Incoming Erasmus Students, as teachers on Erasmus teaching staff mobility (guest teachers at partners' institution – Outgoing Erasmus Teachers) and as hosts of guests' teachers – Incoming Erasmus teachers. Additionally we would like to point out also any situation in virtual mobility, where students and teachers do not meet each other face to face.

Experiences in International Cooperation in Teaching

The Faculty of Electrical Engineering and Computer Science at the University of Maribor are, as we have mentioned already before, involved in Erasmus mobility since 1999. Presented results of our experiences in international cooperation in teaching are using the last four years data from academic year 2004/2005 to academic year 2007/2008 (data for academic year 2008/2009 have been not yet collected at the term of the analysis). Data are presented in three tables: Table 1, Table, 2 and Table 3.

Table 1 presents numbers of Incoming Erasmus Students at the Faculty of Electrical Engineering and Computer Science by country, while Table 2 and Table 3 present by country the Faculty of Electrical Engineering and Computer Science incoming and outgoing teaching staff mobility.

Table 1. Number of incoming ERASMUS students by country

Country	2004/2005	2005/2006	2006/2007	2007/2008
Austria				1
Belgium	1	2	1	4
Czech rep.				2
Finland	3	3	2	4
France	4	7	6	7
Greece			1	
Germany	5	1		
Netherlands	1			
Poland				1
Portugal	2	7	3	8
Romania	2			
Slovak rep.		1		2
Spain	4	10	8	16
Turkey	5	3	6	8
Summary	**27**	**34**	**27**	**53**

If we have closer look to the Table 1, we can make the following conclusions. Until academic year 2007/2008 we had around 30 students per year, what is according to our matriculation numbers, a middle big class of students. According to available data was academic year 2007/2008 really a kind of milestone, while nowadays we have around 50 incoming students per year what is comparable to a big

class of students or actually at least one generation of particular study program. Nevertheless, incoming students are not taking part only in one study program, but more or less in all available, what means around 10 programs per year or 3-5 student per program. But in reality statistics do not know the constant scattering of students. Most of them are visiting 4 out of 10 study programs (Telecommunications, Computer Science, Informatics and Media Communications).

In favour of experiences in international cooperation in teaching are more important and more promising data about students by country. Taking into account all four years most incoming students at the Faculty of Electrical Engineering and Computer Science are coming from Spain (38), France (24), Turkey (22) and Portugal (20). Finland is following with 12 students, while the rest of countries are represented by less than 10 students in 4 cases only by 1 student in four years (Austria, Greece, Netherlands, and Poland). We draw a conclusion that most of our Incoming Erasmus students are "Mediterranean" students, whit probably quite different understanding of lecturing and studying as our teachers are expecting. This means that our teachers are faced with student's cultures which distinguish from our culture and teachers' expectations and vice versa.

Table 2 introduces participation of Incoming Erasmus Teachers by country at our faculty in the selected time period from academic year 2004/2005 to academic year 2007/2008.

Table 2. Number of Incoming Erasmus Teachers by Country.

Country	2004/2005	2005/2006	2006/2007	2007/2008
Belgium		2		
Finland			3	1
France	5	2	2	
Croatia	1			
Portugal			1	
Spain	2		2	
Turkey	5			2
Summary	**13**	**4**	**8**	**3**

Numbers of Incoming Erasmus Teachers are decreasing from academic year to academic year and it is to expect that we will have around 5 guest teachers per year in the future. Mostly the problem is connected to time limitations of teachers at home institutions and in some cases also language barrier is making the mobility not possible. If we are looking to countries dispersion, most of teachers have been visited us from France (9), Turkey (7) as well as Spain (4) and Finland (4). In the case of France we have to mentioned that they were so often around, because they have to check (visit) theirs outgoing students and in the case of Turkey, this was a time period, that they have been involved in the Erasmus program and have done a lot of mobility also with the goal to establish connections. According to above results we would quite difficult conclude, that we have a special regional disperse of teachers.

Our third and the last table, Table 3 is presenting mobility of teachers from the Faculty of Electrical Engineering and Computer Science - Outgoing Erasmus Teachers. Yearly between 10 and 15 teachers are going abroad to teach and be involved in the pedagogical process

of host institution. According to the University of Maribor results about the teaching staff mobility, this is a very good participation in the Erasmus mobility program for teaching staff.

If we are checking results by country, we can find out that most of visits are done in Finland (16) which is followed by Spain (6), Portugal (5) and three countries with the same number of visits (4) - Italy, Slovak Republic and France. On the last two places are Czech Republic and Belgium with 3 respectively with 1 visit in 4 successive academic years.

Table 3. Number of Outgoing Erasmus Teachers by Country.

Country	2004/2005	2005/2006	2006/2007	2007/2008
Belgium			1	
Czech rep.	2			1
Finland	4	6	3	3
France	5		2	2
Italy		1	1	2
Portugal	2	2		1
Slovak rep.			2	2
Spain	1	1	1	3
Summary	**14**	**10**	**10**	**14**

The leading numbers for Finland, Spain and Portugal result from the fact that faculty members have a very good research connection to institutions in those countries and are combining research work and teaching mobility. Similar we can conclude for the second group of countries (Italy, Slovak Republic and France).

If we compare results of three tables, we can conclude, that in the case of teachers mobility, there is no statistical or regional patterns. Results depends on time possibilities, research interest and language limitations. The last one, the language limitation, is connected furthermore to the cross cultural dialogue and has also an expected explanation – still exist generations of teachers that are prepared to teach only in the native language and own culture. Reasons for this are quite different from lack of language knowledge up to inadequate motivation. Mostly the cultural awareness is present and is not influencing results. Also we have to point out that results are based on academic and not virtual mobility.

Virtual mobility is according to available information at the Faculty of Electrical Engineering and Computer Science still very rarely part of Erasmus mobility. Teachers are usually using Moodle more for informing students, uploading materials but not as an e-learning tool. Also on others' faculties of the University of Maribor is incorporation of incoming students on the list of Moodle users' earlier an exception as a rule. That is why for the Faculty of Electrical Engineering and Computer Science no valid data are available about virtual mobility in the connection with Incoming Students and Teaching Staff Mobility.

Conclusions

In the paper we focus on the importance of international cooperation in teaching. In presenting experiences gained at the Faculty of Electrical Engineering and Computer Science at University of Maribor, we have been oriented on the Erasmus program as a part of

Lifelong Learning Program initiated and supported by the EC.

According to the above analysed results we can present the following statements: a) the most attention has to be given to the relation incoming students – home teachers (host teachers from incoming students point of view) and vice versa to the relation incoming teachers (outgoing teachers from faculty point of view) - home students (students of the host institution from the teacher point of view); b) more attention we have to assign also to the virtual mobility.

Virtual mobility is so far not the praxis of Erasmus program. Mostly tools like Moodle are used to support traditional teaching and in some cases we can find e-courses. In the future e-learning have to become a core of virtual mobility. According to expectations for the future of virtual mobility we have to point out cultural awareness [7].

Cultural awareness in general means being open to the idea of changing cultural attitudes or we can understand it as well how we like to be perceived by others or how we are actually perceived by others [8]. Cultural awareness recognises that we are all shaped by our cultural background, which influences how we interpret the world around us, perceive ourselves and relate to other people [4]. That means that cultural awareness is and has to be a part of everyday life.

Cultural awareness has to have an important role also in the case of the first result statement. Namely we have found out that most of our incoming students are "Mediterranean" students coming from Spain, France, Portugal and Turkey. In the cooperation in teaching both students and teachers has to get to know each other's culture, better to say to be aware of each other's culture.

For this purpose, students should be adequately prepared for mobility. Some preparation courses could be organised to avoid cross cultural misunderstanding. Besides additional education on the cultural awareness students should use also possible self-learning tools.

Recommendable are training and presentation modules of the ValeurTech project [1], [9] with the main goal to prepare students and all other participants in the international teaching for mobility with the point on cultural awareness. The only shortage is that modules are available just for eight in the ValeurTech project participating countries (Belgium, Finland, France, Greece, Portugal, Romania, Slovenia and United Kingdom) and not for all EU members or better to say, not for all eligible partners in the EC Lifelong Learning Program as well as not for any international cooperation in teaching [10].

References

1. **Magnan M.** Valeurtech, a Leonardo Pilot Project: Highlighting Professional Experience Acquired in Undergraduate Technology Programmes // EAIE Vienna Conference, Session 4.14, 2003.
2. **Murdoch I. J., Wilkie R.** Placement Learning – Transnational Development in Evaluation of Work–based Learning // Proceedings CIB W89 International Conference on Building Education and Research BEAR 2003 Symposium. – Salford, 2003. – Vol. 3.
3. **Welzer T., Brumen B., Udir K., Stanjko R.** Work Based Cooperation // International Conference Information Society. – Ljubljana, 2004.
4. **Hofstede G., Hofstede G. J.** Cultures and Organizations: Software of the Mind: Intercultural Cooperation and its Importance for Survival. – New York: McGraw–Hill, 2004.
5. **Heimbuerger A.** When Cultures Meet: Modelling Cross–Cultural Knowledge Spaces // In: Jaakkola, H., Kiyoki, Y., Tokuda, T. (eds). Proceedings of the 17th European–Japanese conference on information modelling and knowledge EJC 2007. – Tampere University of Technology, Pori, 2007. – P. 280–285.
6. Moodle web page [Online: http://moodle.org/].
7. **Welzer T., Bonacic M., Zoric Venuti M.** Cultural awareness in information society // EAEEIA annual conference. – Valencia, 2009.
8. **Lewis R. D.** When Cultures Collide // Managing Successfully Across Cultures, Nicholas Brealey Publishing, London, 1999.
9. **Welzer T., Brumen B., Stajnko R.** Valeurtech, a Leonardo Pilot Project: Professional Experience in Undergraduate Technology Programmes – Slovenia Point of View // EAIE Vienna Conference. – Austria, 2003. – Session 4.14.
10. **Welzer T., Brumen B., Stanjko R., Breznik D.** Project VALEURTECH – How to Support Young People for Professional Training in Different Countries // InterSymp 2003. – Baden–Baden, 2003.

T. Welzer, M. Družovec, M. Hölbl, M. Z. Venuti. Experiences in International Cooperation in Teaching // Electronics and Electrical Engineering. – Kaunas: Technologija, 2010. – No. 6(102). – P. 19–22.

International cooperation either in research or teaching is very important already for a vile. In research most of international cooperation is based either on bilateral agreements, either on different international projects and cooperation. Seems that researchers have been earlier involved in international exchange of knowledge and experiences as teachers. In the paper, we will present the experiences with international cooperation in teaching gained when teachers have been involved in mobility programs like Erasmus, transcontinental cooperation or they have taken part in distance and e-learning where the cooperation with international participants (teachers and students) is also possible. Bibl. 10, tabl. 3 (in English; abstracts in English, Russian and Lithuanian).

Т. Вельзер, М. Друможец, М. Холбл, М. З. Венути. Опыт международного содружества в процессе обучения // Электроника и электротехника. – Каунас: Технология, 2010. – № 6(102). – С. 19–22.

Описывается опыт международного содружества ученых университетов при выполнении программ ERASMUS, а также при участии в дистанционном э-обучении. Библ. 10, табл. 3 (на английском языке; рефераты на английском, русском и литовском яз.).

T. Welzer, M. Družovec, M. Hölbl, M. Z. Venuti. Tarptautinio bendradarbiavimo mokymo procese patirtis // Elektronika ir elektrotechnika. – Kaunas: Technologija, 2010. – Nr. 6(102). – P. 19–22.

Organizuojant tyrimus ar mokymąsi didelę reikšmę turi tarptautinis bendradarbiavimas, kurisremiasi arba dvišaliais susitarimais, arba skirtingais tarptautiniais projektais. Pristatyta tarptautinio bendradarbiavimo patirtis, kai dėstytojai įsitraukia į tokias mobilumo programas kaip ERASMUS, tarpžemyninis bendradarbiavimas arba kai dalyvaujama nuotolinio ir elektroninio mokymo procese. Bibl. 10, lent. 3 (anglų kalba; santraukos anglų, rusų ir lietuvių k.).