

Key Factors Affecting Efficiency of Virtual Mobility – Case Study

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Abstract: - The article acquaints readers with over four-year experience with virtual mobility gained during development of the network of interuniversity study in the Czech Republic. Virtual mobility represents utilization of information and communication technologies to obtain the same benefits as one would have with physical mobility but without the need to travel. The contribution describes two projects based on the issue of virtual mobility. The system of interuniversity study is depicted; special attention is devoted to the efficiency of virtual mobility. The efficiency is in this paper understood as a difference in numbers of students who got enrolled in courses at the beginning of the academic year and those who completed courses successfully at the end of the year. Reasons of the unsuccessful study are explored in detail.

Key-Words: case study, education, eLearning, interuniversity study, study failure, study efficiency, virtual mobility.

1 Introduction

Technologies, especially information and communication technologies (ICT), play a significant role in today's knowledge society. These technologies enable removing geographical obstacles, speed up communication and make some processes more effective.

ICT affect not only an industrial sector, but also plenty of other sectors and act as integrating device or a kind of mediator. ICT change society, all that has a considerable impact on development in economic, social and environmental areas. (Casal, et al., 2005)

On the other hand, ICT influence is not only positive one, it may build new, still unknown barriers. A new expression "digital gap" is closely connected with the use of ICT. Similarly it is not true that speeding the communication guarantees higher effectiveness of the communication.

The changes afflict a lot of human businesses as well as education. Remarkable progress can be observed during last fifteen years. Technology allows students to be more flexible as to the time and place of learning in ways that were unimaginable then fifteen year ago.

2 Mobility and Higher Education

Importance of internationalization and mobility is growing at present and the same trend is experienced in the university education.

The first action programme remained the framework of reference for all European Union educational programmes until the Treaty of Maastricht was signed in 1992 (articles 149 and 150). The programme set out three priority areas regarding higher education:

- to increase cooperation between higher education institution;
- to improve possibilities for academic recognition of diplomas and periods of study;
- to encourage the freedom of movements and mobility of teachers, researchers and students. (Wit, 2003)

In 1998 the ministers of education of several European countries (Germany, France, United Kingdom and Italy) discussed a call for a European Area of Higher Education. They signed the Sorbonne declaration, in which the European higher educational systems would be harmonized following a bachelor-master model. Another document of key importance was signed one year later by all ministers of the European Union and the associated countries. This document called Bologna declaration defines clear goals to be reached in 2010:

- enhancing the comparability of Europe's higher education systems on the basis of a two-cycle system, supported by the ECTS-compatible credit system;
- enhancing the employability and mobility of European's citizens;
- improving the competitiveness of Europe's higher education as a whole. (Wit, 2003)

The idea of mobility at the university environment has been connected and supported by the program of European Union ERASMUS for more than twenty years. Erasmus is the EU's flagship education and training programme, enabling two hundred thousand students to study and work abroad each year, as well as supporting co-operation actions between higher education institutions across Europe. Studies show that a period spent abroad not only enriches students' lives in the academic field but also in the acquisition of intercultural skills and self-reliance. Around 90% of European universities take part in Erasmus and 1.9 million students have participated since it started in 1987. (ERASMUS, 2009)

Czech universities have been participating in the ERASMUS programme for 12 years and more than 30 thousands of students have studied abroad.

2.1 Virtual Mobility

An innovative idea in the field of university mobility is utilization of ICT potential.

The use of ICT in the field of university mobility is quite new and interesting way. Staying at home students and teachers can get international and in other respects unattainable expertise via the use of ICT.

Virtual mobility means the use of information and communication technologies to obtain the same benefits as one would have with physical mobility but without the need to travel. (Glossary)

In the frame of the Being Mobile project the expert team defined virtual mobility in higher education institution as a form of learning which consists of virtual components; this kind of learning is run through information and communication technologies supported by learning environment. Virtual mobility includes cross-border collaboration with people from different backgrounds and cultures working and studying together, having the enhancement of intercultural understanding and exchanging knowledge as its main purpose. (Bijnens, et al., 2006)

Virtual mobility may be defined from another point of view – it is the way of collaboration among people from different backgrounds and cultures, working and studying together where crossing borders in not a necessity any more. This approach has special name in the Czech educational environment, it is called interuniversity study.

Virtual mobility and interuniversity study fit well in the context of the Bologna process and e-learning Action Plan. The aim of the Bologna process is to create a European Higher Education Area. And one of its

objectives is to facilitate interuniversity mobility and co-operation among universities.

According to the type of virtual mobility student is free to choose his professor regardless of the geographic distance that might exist between them. Studying at the virtual university enables the student to get familiarized with different educational and learning systems. He/she can improve their adjustability to different levels of culture and philosophy in the area of the university.

Virtual mobility appears beneficial especially in case when studies are not run in the form of traditional full-time studies. Effectiveness and quality of study programs which are implemented through distance or combined study form is, according to the experience across Europe, much higher if several Universities set up a common university network. (Slabý, et al., 2006)

2.2 Types of Virtual Mobility

Due to the fact that the given definition of virtual mobility is rather wide covering a wide range of various activities it is advisable to divide virtual mobility into several categories.

This categorization can be done in different ways, using different views and there is no generally accepted set of categories.

Literary sources base categorization in accordance with various aspects:

- according to the use of virtualization: totally virtual, partially virtual, dual or mixed;
- based on the used technology;
- based on the educational aspects - the teaching and/or learning scenario that has been used.

The expert team of the Being Mobile project based their typology of virtual mobility activities mainly on the terms in which the virtual mobility activity takes place. (Bijnens, et al., 2006) They identified four main types:

- a virtual course (as part of a programme) or seminar (series) at a Higher Education Institution;
- the whole programme at a Higher Education Institution;
- virtual student placements;
- virtual support activities to physical exchange.

The finally mentioned categorization means to be the most suitable one. Single types are described according to (Bijnens, et al., 2006):

A virtual course or seminars at a Higher Education Institution

This category contains activities which focus on the virtual course and are part of the whole study programme at a Higher Education Institution.

Students participate in Virtual Mobility only for a single course or seminar (series) and the rest of their learning activities take place in a traditional way. There are two subtypes:

- collaborative arrangements;
- non-collaborative arrangements.

Collaborative arrangements hold those parts of a course, seminar (series) or other educational services of the awarding institution and are provided by a partner in another country, while non-collaborative arrangements include branch campuses, offshore institutions, corporate and international institutions whereby study programmes, parts of a course of study, seminar (series) or other educational services are provided directly by an awarding institution in one country to another country or countries.

The whole programme at a Higher Education Institution

This is a complete virtual study programme at a Higher Education Institution giving students from different countries or institutions the chance to take this study programme without having to go abroad or to another place for a whole academic year.

Virtual student placements

Using information and communication technologies supports some forms of Virtual Internship with a foreign company. Student placements are organized between an institution and a company in another country.

Virtual activities supporting the physical exchange

Virtual mobility opens up possibilities to both better prepare and follow-up students who take part in a physical Erasmus exchange. A preparatory language and "cultural integration" course could be provided by the host institution supported via information and communication technologies.

At the end of the physical exchange, students can also keep in touch with their new friends and finish their common research project.

2.3 Virtual Mobility Projects

The European Commission and some national agencies actively promote virtual mobility by providing financial support to educational projects in this field. There are several examples of virtual mobility projects in the European area:

EVENE - Erasmus Virtual Economics & Management Studies Exchange

The core aim of this project was creation of a network of traditional European higher education institutions for the purpose of mutual exchange and sharing of courses and

pedagogues and a possibility of providing these to students in a distance form of education supported by the eLearning format. The EVENE project creates a core network of universities operating in the field of Economics and Management study. (Zimola, et al., 2006)

EVICAB – European Virtual Campus for Biomedical Engineering

This project sets up an online platform on which various partner universities and universities outside the consortium can offer their courses. The responsibility for each course, its maintenance and its delivery remains within the universities. Each university offers its courses to the online programme, it can also take out courses from the online programme into its own study programme. (EVICAB)

REVE – Real Virtual Erasmus

The REVE project aims to enhance the impact and efficiency of traditional Erasmus programmes through the development and support of Virtual Erasmus actions. (REVE)

VENUS – Virtual and E-mobility for Networking Universities in Society

This project implements two different models of virtual seminars: a virtual seminar series of monthly seminars during the academic year and a one-week virtual summer school. The seminars consist of three main parts: interactive preparatory activities, seminar delivery (presentation, localization and discussions) and interactive follow-up activity. Seminars aim at promoting European citizenship, collaboration and personal development. (VENUS)

3 Virtual Mobility in the Czech Republic

Faculty of Informatics and Management, University of Hradec Králové (FIM UHK) has devoted its attention to the problems and issues associated with eLearning since the beginning of 1997. FIM UHK belongs to pioneers in utilization of ICT in the process of education in the Czech Republic.

Quite soon voices calling for cooperative and collaborative ventures among universities in the area of creation of distance eLearning courses could be heard. Challenging option for collaboration was identified at the eLearning in Higher Education 2003 Conference organized by Tomas Bata University in Zlín, which involved sharing of courses - including the relevant teaching staff and providing these courses to students of partner institutions, leading to the exchange of students through the intermediary of eLearning-supported distance courses. (Zimola, 2003)

This idea was worked out and brought to existence in two projects which are described below.

3.1 RIUS project

Since 2005 the first Czech virtual mobility has been run in the form of RIUS project - Initiation of the Inter-University Study in a Network of Selected Universities in the Czech Republic. The University of West Bohemia in Plzen, University of Hradec Králové and Tomas Bata University in Zlín took part in this project. The project RIUS involved sharing of both the courses and teaching staff of the universities participating in this project. Student of these universities could pass part of their study programme at universities other than their alma mater university. The project belonged to those which are supported from European social funds.

The main objective of the RIUS project was to build a substructure of the network of selected universities in the Czech Republic and thus enable forming the working virtual interuniversity space where blended and distance form of study could be run via eLearning.

The aims of the project could be expressed in the following way:

- to build strong fundamentals of the network of universities and colleges and launch interuniversity study in the Czech Republic;
- to enable start of interuniversity study in the network of selected universities;
- to improve quality and attractiveness of study programmes and subjects offered by single universities and colleges;
- to increase effectiveness of financial means invested into blended and distance forms of study benefiting from eLearning;
- to prepare universities and colleges in the Czech Republic for more intensive and closer cooperation with counterpart institutions abroad. (Poulová, et al., 2006)

The whole project had a positive and beneficial impact on students from participating universities in the following areas:

- the offered subjects are supposed to be of high quality and backed by notable experts;
- students have opportunity to create individual study plans based on a wide offer of educational subjects of participating universities;
- time and place flexibility of study. (Poulová, 2007)

The courses are provided in a distance form of education with eLearning support. This eLearning course is organized in the form of an introductory meeting in the presence of both teachers and students at the students` alma mater university, directed self-studies

supported by a virtual educational environment and, as may be required, by further interim face-to-face meetings, combined with live examinations. The live face-to-face meeting may be replaced by real-time video-conferencing via the Internet.

Depending upon prior agreement with a partner university, students can choose these courses within the context of their compulsory elective subjects. Information on subjects offered within interuniversity study is placed in catalogues of subjects and in the information system of study agenda of student's alma mater university. If a student is interested in some of the "outside" subject he/she will get registered it into their study plan, so the subject will be recorded in a student's study register. At the end of the semester when the subject is finished, the tutor informs the study department of students' alma mater universities on their results. The study department is responsible for writing these results into study records of participating students who successfully completed the subject. The students are granted the reached credits (ECTS). The credits acquired by the student are added as a part of the fulfillment of their standard study duties. Through making the best use of the range of interuniversity studies on offer to them, students can not only enrich their own study plans with topics attractive to them, but also get to know new educational methods and instruments, and have a share in the genesis of an expanded system of interuniversity studies in the Czech Republic, enabling mutual sharing of study subjects and experts across this university network. (Hán, 2005)

3.2 EVENE project

The other project - EVENE project (Erasmus Virtual Economics & Management Studies Exchange) supported by the European Union's eLearning programme was inaugurated in 2006.

The project's consortium was composed of three Czech universities - the same ones as in the RIUS project and five European partners (the Galway-Mayo Institute of Technology in Ireland, Huddersfield University Business School in Great Britain, the Savonia University of Applied Sciences in Varkaus in Finland, the Riga International School of Economics and Business Administration in Latvia, and the University of Genoa in Italy).

The core aim of this project was foundation of the international network of traditional higher education institutions. The purpose of the project was a mutual exchange and sharing of courses and pedagogues and the possibility of providing these to students in a distance education supported by eLearning. (Zimola, et al., 2006)

3.3 Process Model of the Interuniversity Study

The interuniversity study organization is managed by the developed process model.

The main aim of making model of virtual university was transformation of the system of virtual university into more formalized description that can be subsequently used for software development and could result in making information systems of virtual university. During the stages of analysis and design there should be followed the following steps: (Kadavová, et al., 2008)

- Analysis of experience and knowledge about present organization of education and its administration advantages and disadvantages about on line courses, distance and combined education and finally about interuniversity education and its administration.
- Finding out of key processes that fully cover activity connected with administration, management and running distance and combined form of education in the form of e learning courses.
- Finding out and support of key processes in more universal case when education is organized by the network of collaborating universities.
- Subsequent development, implementation and testing of supporting information systems for collaborating network of universities. These systems may be used not only for the support of education process but also as knowledge base in the area.

Due to increasing number of operations and participating people necessity of creation of working management system had arisen.

At the primary phase just after starting up the project it was necessary to make an analysis of individual processes, their management and time monitoring so as the project could work as an integer.

Individual processes were identified, recorded and optimized on the basis of the initial analysis. The way of management of these processes was designed at the same time.

By this analysis an organizational structure including personal solution was created so proprietary relations of particular processes were clearly defined. At the same time a system enabling planning, monitoring and evaluation of the performance of the processes was developed.

In case of interuniversity study (IUS) the organization encompasses integration of various systems, methods of operation and processes implemented in all partner

institutions. That is why it was necessary to develop a detailed IUS process model comprehensively describing particular processes including setting responsibility and applicable tools.

Individual universities act also as providers (i. e. institutions which offer within the frame of IUS e-subjects to students of partner institutions) as well as parent institutions (i.e. institutions which enable within the frame of IUS to their students study e-subjects offered by partner institutions).

Activities of all participating roles are described in framework of the model: coordinators, administrative workers and pedagogues engaged in IUS. In each workplace there is an IUS coordinator who is in charge of all IUS activities; this coordinator is responsible for the run of all necessary processes at their institution, he/she promotes IUS idea and together with coordinators from partner workplaces takes part in the IUS management as whole. IUS study administration is created at each workplace, this administration records enrollment of students into e-subjects, prepares and ensures introductory and interim tutorials as well as final examinations from the organization point of view. It ensures communication with students and pedagogues of their institution and with study administrations of partner workplaces and eventually it is responsible for keeping records of gained study results.

IUS is organized in year-cycles. The study itself is likewise a traditional high study in the Czech Republic run during the academic year which consists of a winter and summer semester.

Study within IUS frame is run at the beginning of the academic year when a winter semester starts. *IUS Preparation* for a following academic year has to start before a summer semester is open, during the summer semester *Study within IUS frame* is run, as well.

IUS Preparation is always realized in a previous academic year. It begins in January and ends before the start of a new academic year in August. Firstly each institution engaged into IUS has to in the role of a provider institution *Make an offer of exported subjects*, these are subjects which are offered to partner institutions. After that individual institutions will work out *Evaluation of imported subjects' offer*, i.e. subjects which are offered by other partners. *IUS Promotion* begins when a list of imported subjects is made, IUS promotion is run in some respects during the whole IUS project.

Study within IUS frame is run in individual semesters and is divided into four interrelated steps. *Enrollment into subjects within IUS frame* has to be done before the semester starts. After enrollment *Study within IUS frame* is run during the whole semester which is at the end of

the semester and in the following exam period finished by the process *Ending of subjects within IUS frame*. *Evaluation of the semester* is elaborated after each semester.

The model is refined during project solution and is specified in respect to growing cohesion of IUS and surroundings. At present it contains over 120 atomic processes where each of them has their owner responsible for the run, term of realization and used means.

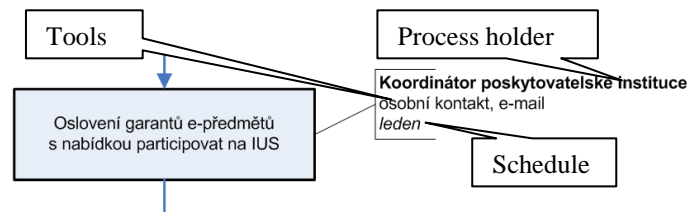
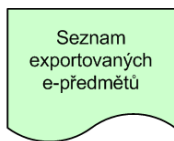


Fig. 1 Description of an atomic process

Important documents which are either output of the process or just enter the process are visualised by means of a symbol.



In the picture 2 there is an example of one of five subprocesses. Each atomic process has on their label process owner, way and term of realisation. Potential process inputs and outputs are depicted in the model.

The IUS process model contains beside schematic diagrams a detailed verbal description of individual processes and their summarizing into well-arranged charts assorted according to owners or terms of realisation.

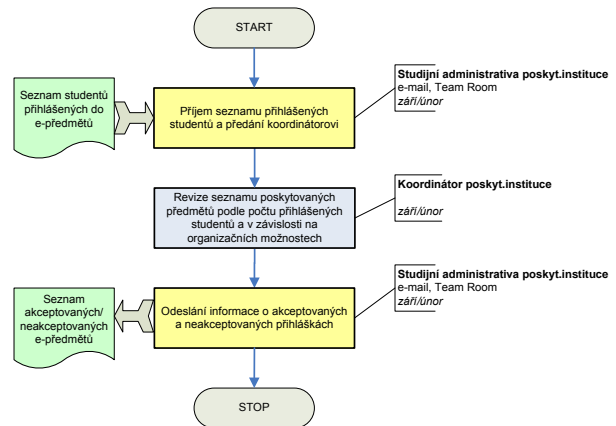


Fig. 2 Model of adjustment of provided e-subjects

When the model was created, all activities were analyzed in detail so that particular processes could be defined. In the following phase the processes were incorporated into the appropriate hierarchy and each was given its owner. (Poulová, 2008)

3.4 Evaluation of the Interuniversity Study

The strong evaluation system was set up in the frame of these projects.

The evaluation system monitors the level of educational services and the interuniversity organization's quality. The system is based on:

1. Synchronizing questionnaires for tutors,
2. Final evaluation questionnaires for tutors,
3. Final evaluation questionnaires for successful students,
4. Final evaluation questionnaires for unsuccessful students,

Each partner creates the evaluation statistics for his university at the end of each academic year.

4 Students' Study Success in the Frame of Virtual Mobility

Due to these two projects over 2 194 students were given chance to study at least one out of 164 subjects in last three academic years (Fig. 3).

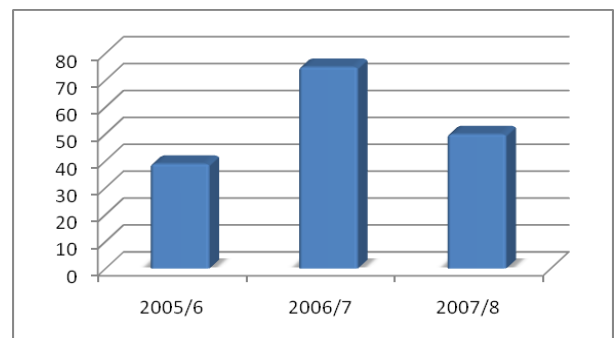


Fig. 3 Number of subjects from 2005/06 until 2007/08

4.1 Efficiency of Virtual Mobility

The efficiency is within the project understood as a difference in numbers of students who got enrolled in courses at the beginning of the academic year and those who successfully completed courses at the end of the year. (Poulová, et al., 2007)

2 194 students got interested in studies within the interuniversity studies during the traced period, 1 055 students passed their subject and gained the credit and exam. So the average efficiency reaches 48%.

Followed values vary in individual subjects in a wide span from 0% to 100% (Fig. 4).

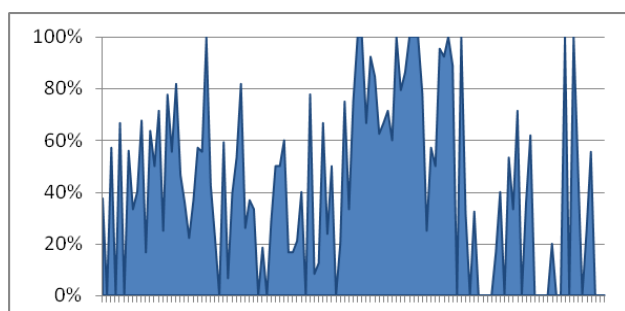


Fig. 4 Study efficiency of individual subjects

Some differences in study efficiency of subjects provided by individual universities might be seen. For example subjects offered by University of Hradec Králové reached up to 80 % of study efficiency, subjects offered by Tomas Bata University in Zlín got to 27 % and subjects prepared and run by University of West Bohemia in Plzen reached 47% of study.

When we look at the study efficiency from the point of view of alma mater universities of enrolled students the situation is quite different. Only 18 % of students from Savonia University of Applied Sciences in Varkaus and 32% of students from University of Hradec Králové successfully finished their study, on the other hand students from Tomas Bata University in Zlín were successful in 87%, as for students from University of West Bohemia in Plzen there were 66% of them who successfully finished their subject.

4.2 Reasons of Drop-Out rate

Is it possible to say that students from Savonia University of Applied Sciences have very poor study habits and because of that they leave the subject during the semester? Or is it more accurate to say that tutors from University of Hradec Králové are the best in methodology of education in distance and eLearning subjects and that is why they reach the best results?

Similar statements are rather misleading and simplifying. To avoid this situation the members of the project team developed a questionnaire and distributed it to those students who did not finish the chosen subject. This questionnaire accompanied in a suitable way another questionnaire which was filled in by tutors and students after the exam.

The questionnaire consisted of twelve questions divided into three logical sections. The first section dealt with reasons of drop-out of the chosen subject due to technical and administrative reasons, the second one reflected the reasons of drop-out associated with the content and way of learning/teaching the subject and the third section followed the drop-out reasons associated with poor quality of tutor’s work. The questions were formed in the way of statements; a student was to express agreement or disagreement with these statements, for example: “The tutor was not able to establish contact with students”.

If a student agreed with the statement, he/she marked out the level of significance of an appropriate factor in his/her decision making (crucial, substantial, of little importance). In each sections there were chosen three areas of possible biggest problems where students could state also other reasons of their study drop-out beside offered three options mentioned above. (Poulová, et al., 2007)

PART III

Drop-out reasons associated with poor quality of tutor’s work.

1. *The tutor was not able to establish contact with students.*

YES NO

If you answered YES, will you mark a level of significance of this factor in your decision making:

CRUCIAL SUBSTANTIAL OF LITTLE IMPORTANCE

Fig. 5 Extract from the questionnaire of drop-out students

Evaluation consisted of 65 questionnaires.

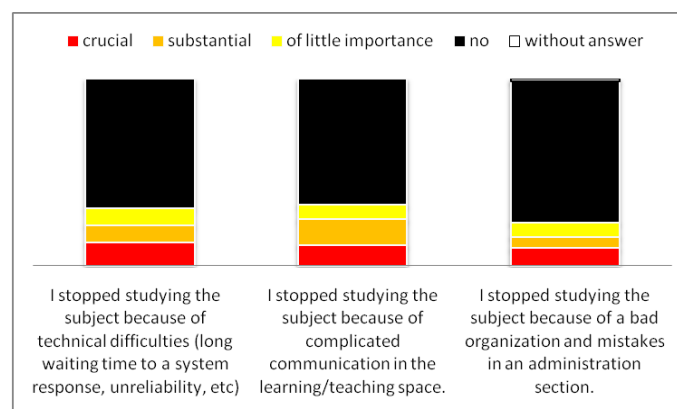


Fig. 6 Reasons of drop-out associated with technical and administrative problems

	crucial	substantial	of little importance	no	without answer
I stopped studying the subject because of technical difficulties (long waiting time to a system response, unreliability, etc)	8	6	6	45	0
I stopped studying the subject because of complicated communication in the learning/teaching space.	7	9	5	44	0
I stopped studying the subject because of a bad organization and mistakes in an administration section.	6	4	5	49	1

Table 1 Drop-out due to technical and administrative reasons

As illustrated in the Table 1 and Fig. 5 more than 70 % of students wrote that their failure was not connected with technical or administrative reasons.

Some students could see the main reason of their drop-out in themselves (“After all I did not have any time to do it because I took too many subjects.”, “It was not because of technical or administrative reasons, I left this form of study due to my study plan which was too demanding for me so I gave priority to compulsory subjects”, „So few students, and even my partner also dropped“, „it was rather hard to complete all tasks till deadlines“, „I just enrolled too many subjects generally so I had to drop of some of “less important”.“, „I couldn’t find space for proper learning and taking the exam.“, „I have made mistake in my time-management, so I had not enough time to complete this course.“).

A few of them saw the reason of their drop-out in technical problems („Different and unclear e-learning system.“, „The faculty anti-spam filter marked tutor’s e-mail as spam and deleted them.“).

Some students justified their drop-out in administrative problems („I reserved time at the beginning of March for that, but this program started in the middle of semester hence I wasn't interested anymore.“, “I didn't start studying because I had had no information about education of this subject.“).

Problems connected with content and the teaching/learning of the particular subject make another critical factor. A chosen subject proved to be too demanding for 27 % of students (“Too big requirements to get a credit and an exam”; “I missed the term of my seminar work submission”), 15 % of students was not satisfied with the elaboration of the subject (“The conditions of an assignment elaboration were not clearly explained, there were old assignments from last year and

it was not clear whether these old assignments are to be elaborated or not” ; “Materials were placed too late into the learning environment”).

	crucial	substantial	of little importance	no	without answer
The content of the subject was actually different from the content I had expected.	2	6	6	47	4
The subject turned out to be too demanding.	3	14	6	36	6
The elaboration of the subject content did not suit me.	3	7	9	41	5

Table 2 Drop-out associated with the content and way of learning/teaching the subject

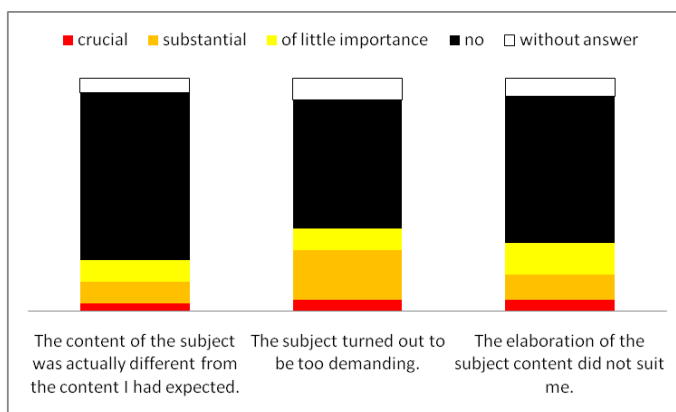


Fig. 7 Reasons of drop out associated with the content and way of learning/teaching the subject

	crucial	substantial	of little importance	no	without answer
The content of the subject was actually different from the content I had expected.	2	6	6	47	4
The subject turned out to be too demanding.	3	14	6	36	6
The elaboration of the subject content did not suit me.	3	7	9	41	5

Table 3 Drop-out associated with quality of tutor’s work

Students made comments on subject content and technical support but surprisingly over 15% did not evaluate tutor’s work at all. Quite alarming is that 12 % of students stated that their tutor had not established any contact with them (“I saw my tutor only at the kick off tutorial and I did not try to communicate with him via EDEN”). According to 12 % of students the tutor organized his/her classes in a bad way (“I was happy that

systematic work was not required from us. On the other hand it did not pay to leave everything to the last moment”).

In spite of the fact that number of students who were not satisfied with work of their tutor is not too high, the figure is really alarming. Quality tutor's work is of critical importance in the effectiveness issue. Effectiveness of online learning primarily depends on interactivity. (Aleksic-Mascal, et al., 2009)

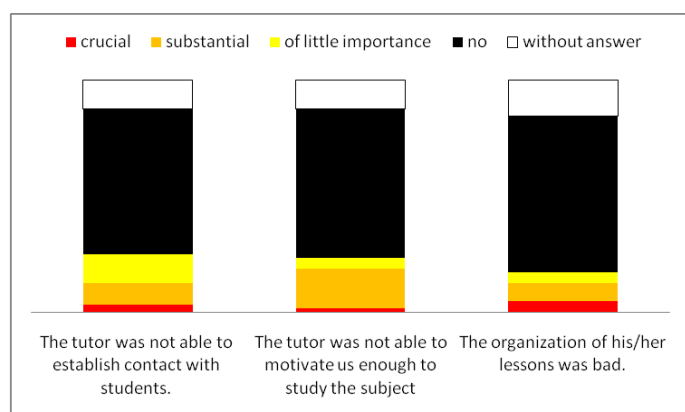


Fig. 8 Reasons of drop-out associated with a poor quality of a tutor's work

4 Conclusion

Virtual mobility represents for students trendy option to reach knowledge which they cannot get at their alma mater.

Beside gained knowledge students' lives get enriched with worthy experience brought by different cultural environment.

The idea of virtual mobility is interesting for both students and universities which is proved by the fact that original establishing three-member network of universities in the Czech Republic has branched out since 2005 by three more universities: Mendel University of Agriculture and Forestry in Brno, Palacký University, Olomouc and VŠB-Technical University of Ostrava.

Although subjects offered within the interuniversity study belong to facultative subjects in students' study plans, the rate of success in passing them is quite high.

Nevertheless it is necessary to pay great attention to reasons leading to drop-out in particular subjects. First and foremost it is essential to provide students with comprehensive and accurate information on content, demands, prerequisites and a form of study of particular offered subjects. Persistent attention to tutors training is of vital importance so as they would be able to manage and run the distance classes in an appropriate way.

References:

- Aleksic-Mascal, K., Magzan, M. and Juric, V. 2009.** The Role of Discussion Boards in Facilitating Communities of Inquiry: A Case of ICT and Sociology Courses at Zagreb School of Economics and Management. *Proceedings of the 5th WSEAS/IASME International Conference on EDUCATIONAL TECHNOLOGIES (EDUTE' 09)*. Tenerife : WSEAS, 2009, pp. 104-106.
- Bijnens, H. and Boussemaere, M. 2006.** European Cooperation in Education Through Virtual Mobility – A Best-Practice Manual. *elearningeuropa.info*. [Online] 2006. [Cited: 8 5, 2007.] http://www.elearningeuropa.info/out/?doc_id=9957&sr_id=11436.
- Casal, C. R., Wunnik, C. and Sancho, L. D. 2005.** How will ICTs affect our environment in 2020? *Foresight: the Journal of Future Studies, Strategic Thinking and Policy*. 2005, Vol. 7, 1, p. 77.
- ERASMUS. 2009.** Lifelong learning programme. *European Commission - Education*. [Online] 10 1 2009. [Cited: 20 7 2009.] http://ec.europa.eu/education/lifelong-learning-programme/doc80_en.htm.
- EVICAB.** European Virtual Campus for Biomedical Engineering. *EVICAB*. [Online] [Cited: 20. 7 2009.] <http://www.evicab.eu/>.
- Glossary.** Virtual Mobility. *Elearningeuropa.info*. [Online] [Cited: 6 6, 2008.] <http://www.elearningeuropa.info/main/index.php?page=glossary&abc=V>.
- Hán, J. 2005.** Cooperation of Czech universities on the field of e-Learning. *International Conference on e-Learning Souvenir*. Namakkal : PGP College, 2005, pp. 12 - 17.
- Kadavová, M., Slabý, A. and Malý, F. 2008.** Key Factors Involving the Design of the System of Virtual University. *7th WSEAS Int. Conf. on APPLIED COMPUTER & APPLIED COMPUTATIONAL SCIENCE (ACACOS '08)*. Hangzhou : WSEAS, 2008, pp. 678 - 683.
- Poulouva, P. 2008.** *Procesní model interuniverzitního studia*. Hradec Králové : Gaudeamus, 2008.
- Poulouva, P. 2007.** The Virtual Mobility And The Interuniversity Study. *5th International Conference on Emerging e-learning Technologies and Applications (ICETA 2007)*. Košice : ELFA, 2007, pp. 59-63.
- Poulouva, P., et al. 2006.** Initiation of the Inter-University Study in the Network of Selected Universities in the Czech Republic. *Virtual University*. Bratislava : STU, 2006, pp. 115 - 119.
- Poulouva, P., Janeček, V. and Černá, M. 2007.** Reasons Of Failing In Interuniversity Study. *Information and Communication Technology in Education 2007 (ICTE 2007)*. Ostrava : University of Ostrava, 2007, pp. 37-40.
- REVE.** REal Virtual Erasmus . *REVE project*. [Online] [Cited: 7 20, 2009.] <http://reve.europace.org/>.
- Slabý, A. and Kadavová, M. 2006.** Process Based Modeling of Virtual University. *Proceedings of the 5th WSEAS*

International Conference on Education and Educational Technology. Tenerife : WSEAS, 2006, pp. 73 - 75.

VENUS. Virtual and E-mobility for Networking Universities in Society. *Venus project*. [Online] [Cited: 7 20, 2009.] <http://www.venus-project.net/>.

Wit, K. 2003. The Consequences Of European Integration for Higher Education. *Higher Education Policy*. 2003, Vol. 16, pp. 161-178.

Zimola, B. 2003. Possibilities for Collaboration between Higher Educational Institutions - Virtual Mobility, the Czech Virtual University of Economics. *Proceedings eLearning in Higher Education Conference*. Zlín : UTB, 2003, pp. 267-269.

Zimola, B., et al. 2006. Building a virtual learning and teaching community in the Czech Republic and in Europe. *EISTA 06 : 4th International conference on education and information systems*. Orlando : International institute of informatics and systemic, 2006.

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