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E-learning as internationalization strategy in higher education

Lecturer's and student's perspective

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Abstract

Purpose – Use of e-learning opens up a whole new range of business expansion and internationalization opportunities for many companies including higher education institutions. The paper seeks to explore the challenges a business college may encounter using e-learning as internationalization strategy. E-learning-related problems are analyzed from two main internal interest groups' point of view – lecturers and students. The aim of the case study presented in the paper is to find out what are the major challenges from a student and academic personnel perspective using e-learning. This kind of analyses should be the first step introducing e-learning as a strategic tool for business expansion.

Design/methodology/approach – Questionnaires, in-depth interviewing and semi-structured group interviews were used to find answers to the posed research questions. Research took place in two phases. In phase one, two types of questionnaires were distributed – Type A to lecturers (ten respondents) and Type B to students (115 respondents), Both types were constructed by the author. In phase two, two in-depth interviews and two semi-structured group interviews were conducted (ten students in one group of interview, eight lecturers in the second group of interview).

Findings – The main problem areas for lecturers related to e-learning are: lack of time, lack of interest/motivation, lack of co-operation, compensation system does not take into account the specifics of e-learning and lecturers are concerned about the quality of teaching in a virtual environment. The most problematic of them appear to be lack of time and inappropriate compensation system. Students appear to have interest in e-courses, but the level of knowledge regarding specifics of web-based learning as well as about e-courses offered was unexpectedly low. This is an especially problematic case as open university students were the main target group for whom the e-courses were designed in the first place.

Research limitations/implications – The research is based on one case study and thus the conclusions made may not exactly reflect the situation in all universities of Estonia. But due to the shared economic, cultural and historical background, at least to some extent the case study reflects the main problem areas of all Estonian universities using e-learning.

Originality/value – The originality of the paper stems from an interdisciplinary approach to e-learning – use of e-learning as a tool for internationalization. The paper presents results of a case study research, conducted in an East-European business college and the results of the study are discussed in respect of historical, social and economic specifics of Estonia.

Keywords E-learning, Higher education, Students, Academic staff, Estonia

Paper type Case study

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Introduction, definitions and background

There can be noticed two important trends influencing companies and their management in Estonian economic environment and also at global arena: firstly, increased level of use of information and communication technology (ICT) and secondly, speed and scale of changes occurring is increasing constantly. First of

the trends can be observed in education sector as increased use of distance learning and also as use of combinations of distance and ordinary classroom type of teaching.

There has been a lot of discussion regarding terminology related to distance learning, the following terms are usually used interchangeably (Keegan, 2002): distance education, distance teaching, distance learning, online education, web-enabled education, distributed learning. But also terms "electronic-learning" and/or "e-learning" are being used (Homan and Macpherson, 2005; Mutula, 2002). In this paper, the term e-learning is used as the author believes it to be the most appropriate. E-learning can be defined as follows (Beamish *et al.*, 2002):

> ... a wide set of applications and processes allied to training and learning that includes computer-based learning, online learning, virtual classrooms and digital collaboration. These services can be delivered by a variety of electronic media, including the intranet, internet, interactive TV and satellite.

There is a substantial amount of literature written on the subject of business schools and their future (King, 1995; Morrison, 2003; Abeles, 2005; Kathawala *et al.*, 2002; Hawawini, 2005; Freeman and Thomas, 2005; Moratis and Baalen, 2002; Gomes and Murphy, 2003; Binsardi and Ekwulugo, 2003). It is apparent that there are changes taking place in the tertiary education sector and one of them is changes related to attempts to penetrate global education market. Cheng (2001) points out that among different types of globalization there is also learning globalization. The reason for this trend and change in tertiary education sector is that twenty-first century universities can be successful, efficient and effective deliverers of education if they globalize their activities using satellite and/or electronic international multimedia communication (King, 1995). Although the issue of business schools' globalization is discussed (Freeman and Thomas, 2005; Moratis and Baalen, 2002), it is usually done in general and not addressing the issue specifically from the point of view using e-learning as a tool of internationalization, as proposed in current paper.

The aim of the paper is to advance the discussion of tertiary education sector's globalization by proposing that e-learning can be used as the main tool for globalization process of a business college. The case study type of research presented in the paper was conducted in an Estonian business college – Pärnu College of Tartu University (PCTU). Thus, results of this case study can be used to compare the West-European (and western, in general) practices of using e-learning to East-European practices. Vast majority of the literature published so far is based on the practices of developed Western countries. The historical, social, etc. factors make the e-learning development in transition countries more difficult and e-learning is related to different additional problems. Although, the author acknowledges the fact that the conclusions will be made based only on one business college case and it is not enough to make generalizations that these are the e-learning-related problems in all post-soviet countries, at least to sum extent, the problems are similar or even same.

Any organization that is planning to become international needs to start the process with analyses of the current situation – internal and external environment. Steming from that logic PCTU is in the beginning of the process and the first step in using e-learning for internationalization is to conduct an analyses on the current use of e-learning at PCTU (internal environment). Table I outlines four models of expansion using e-learning in any educational institution. Usually institutions start with the Model A and then move on to the Model B followed by C and D. PCTU has so far used

Models A and B. The main goal conducting the survey followed by interviewing academic personnel and students was to find out what are the major challenges from student and academic personnel perspective using e-learning. The results enable to plan better the next steps of internationalization using e-learning as the main tool.

Keeping in mind that there are two main internal interest groups (faculty and students) involved, the following research questions were formed:

(1) *Faculty aspects:*
   - Do the lecturers use e-learning?
   - If yes, then why? If no, then why not?
   - What are the attitudes towards e-learning in general and teaching e-courses in English?

(2) *Student aspects:*
   - Do the students of PCTU attend e-learning courses?
   - If yes then why? If not, then why not?
   - What kinds of problems have students encountered while taking e-courses?
   - Which courses students would be interested in taking as e-courses?

The expected research results were that relatively little e-courses are being offered and if, then mainly by younger lecturers and mostly as electives. Students were expected to be positively inclined towards taking e-courses, but little e-courses are still being offered by lecturers. Main problem area concerning e-learning was assumed to be the time factor (in case of lecturers too little time to learn and take care of the technical side of e-learning as well as for preparing and turning ordinary courses into e-courses; in case of students lack of time to take up additional courses).

E-learning in Estonia

Use of e-learning in university environment as well as in learning overall has gained popularity and not only from the researchers' side. The number of e-courses offered has been rising constantly. Table II gives overview of current situation at university level e-courses offered in Estonia. As 100 percent pure e-learning has given setbacks from learning and teaching point of view more commonly blended learning (combination of ordinary classroom type of teaching in addition to e-learning) is being used.

There are many reasons for colleges to start e-learning initiatives, the most obvious being that there is a great demand for this type of education. The main reason for this is the aging population's need to continue life-long learning and e-learning is suitable for learners with varying lifestyles. In order to remain competitive, colleges must offer

Table I.
Four models of expansion for an educational institution

	Type of learning	
	Ordinary learning	E-learning
Scope of expansion		
International	D: Classroom learning for international students	C: E-learning for international students
National	A: Classroom learning for local students	B: E-learning for local students

this type of learning (LaBay and Comm, 2003). At the same time, the biggest obstacle to entry into the distance learning market is to set up the logistics and systems required to support students over a wide area. In order to overcome this problem, different educational institutions start creating strategic alliances (Daniel, 1994). These trends are also apparent in Estonia.

Political and economic changes in society require institutions to reshape their strategies to survive in changing environment and this applies first of all to all former soviet countries. After joining the European Union once again more opportunities are present to expand the scale of business, but it also means in higher education business:

- flow of potential (young adult) learners to work and study abroad; and
- entering into competition at international level.

E-learning can become the tool to prevent the loss of students, to reach new customer segments (e.g. older adult learners), which may be geographically wherever. In this perspective e-learning serves as internationalization strategy for higher education institutions and this idea has been indorsed also at governmental level in Estonia during recent years.

The approach to e-learning is changing on institutional as well as on governmental level in Estonia. Estonian e-University (Eesti E-Ülikool, www.e-uni.ee) is consortium of Estonian higher education institutions, which goal is to start and support e-learning co-operation projects between universities in Estonia and on reaching to international level. This support is based on the idea of life-long learning necessity and it enables participating institutions to cut costs, to offer better quality of education, to simplify international co-operation and to make education of high quality attainable to students and every interested person all over Estonia. Estonian e-University offers also public e-courses meant for any interested party. One of the goals of offered e-courses is to introduce e-learning and technologies used in e-learning. Public courses are free of charge. Popularizing e-learning in higher education at governmental level is, in addition to Estonia, one of main educational policy priorities also in Greece, UK, etc. (University of the Aegean promotes online learning throughout Greek Islands, 2004; Schools e-learning programme launches in India, 2004).

As seen from Table II, many institutions have started many e-courses, but the numbers have not changed over the past year. This is indicating that there is interest from faculty side to develop e-courses, but there are probably problems related to new e-course or blended courses development. The research results should also give some explanation to that. First two e-courses at PCTU were introduced as pilot courses of academic writing in English language in 2002 and these where pure e-courses

Institution	Number of e-courses
University of Tartu	140
Estonian Business School	56
Pedagogical University	43
Tallinn Technical University	23
IT College	8
Estonian Agricultural University	6
Total	276

Table II.
E-courses offered in Estonian higher education institutions

(no ordinary classroom type of meetings). There were only two students involved in pilot courses, but already in 2003, a number of e-courses in different subjects were offered to general body of PCTU's students and currently there is 11 e-courses offered. Change in approach to e-learning is also seeing it as strategic tool for expansion of institutional activities.

Method

Design and instruments

Questionnaires and in-depth interviewing was used to find answers to the posed questions. Research took place in two phases. In phase one, two types of questionnaires were distributed – Type A to lecturers and Type B to students (both types were constructed by the author of the paper). This phase was expected to provide answers to the student aspects and two first faculty aspect questions. In phase two: individual interviewing was used and two group interviews (one with students, one with lecturers) were conducted. The two initial interviews in phase two were conducted to gather background information and to deepen and broaden the understanding of problems related to e-learning. The interviewees were technologist of pedagogy and assistant of informatics – people daily solving e-learning problems of faculty. The phase two in general and group interviews in particular were expected to give deeper insight into lecturers and students attitudes towards e-learning, outline challenges related to it and help to assess lecturers readiness to use more e-learning tools for present students and develop new e-courses in English for potential international students.

Research participants, sample and respondents

The participants of the research were faculty and undergraduate students of PCTU. Both phases of research took place from February to March, 2005. The sample of lecturers was 15, total number of lecturers having permanent contract with PCTU – 29; ten questionnaires were returned thus opinions of 35 percent of lectures were gathered and 67 percent of distributed questionnaires were returned. The sample was random. The questionnaires were returned directly to researcher or using secretary of PCTU.

There are daily students (graduating after three years of study, 308 students) and open university students (graduating after four years of study, 664 students) – in total 972 students – studying at PCTU in 2004/2005. Open university students are usually older learners who also work during their years of study and their program requires them to be at school only one weekend (from Thursday to Sunday) per month. The initial idea was to make up the sample only of open university students (from the second to the fourth course) as currently most of the e-learning courses offered is based on the idea that it simplifies learning for them and open university students were the main target group for e-course development.

Later, during the information collecting, opinions of a relatively small number of daily students were also collected to see if there is any difference between daily and open university students group, although difference was not expected. The research sample was random – questionnaires were distributed to students participating the author's lectures in February 2005. All interested students and lecturers were invited to join group interviews. Out of 140 distributed questionnaires to open university

students, third and fourth course 96 questionnaires were returned. The second year daily students of business administration and social work studies: 19 questionnaires distributed and all returned.

Results

E-learning in general

Based on the interview with technologist of pedagogy, it can be concluded that there were 11 e-courses offered at PCTU in fall semester of 2004/2005. None of them were 100 percent e-courses (Table III). As six out of these 11 courses offered are taught by so-called young lectures (graduated with Master's degree in last two years and have worked at PCTU from approx. two to four years), thus one of the expected results, that e-courses are more offered by younger lecturers, found confirmation.

Main problem areas, lecturers have so far turned to technologist of pedagogy (position was added to PCTU organizational structure in September 2004), are following: formatting of documents, uploading them to web-learning environment (WebCT – a learning platform – is being mainly used in Estonian universities (Tamberg, 2005)) and WebCT-related consulting. It appears that most of the problems are of technical nature.

Technologist of pedagogy considers main reasons why web-learning is still used so little by lecturers firstly lack of time and secondly unclear compensation system of e-learning lecturers. Based on two interviews the main problems concerning e-learning can be summed up as follows:

- *Lecturers' lack of time*. Mainly it is related to preparing the e-course and adjusting existing courses into e-course format. Partially, it is reasoned as development of 100 percent web-based course is a time consuming process; from the other point of view a well prepared and user friendly e-course frees lecturers from lecturing and saves time for other academic activities. Unprepared or without proper know-how prepared e-courses can later on take up enormous amount of lecturer's time – this is also one of main reasons why part of lectures principally do not offer or support web-based learning.
- *Lack of clarity in compensation system*. E-learning is different from ordinary learning and teaching. Unfortunately, so far no clear rules have been developed for how to measure and pay fairly for the work of an e-teacher.

E-course subject	Lecturers' length of service in years
Mathematics	3, 5
Mathematical statistics and probability theory	
Statistics	
Tourism planning	4, 5
Basics of tourism management	
Business communication	8
Basics of accounting	8, 5
Conducting research and presenting results	8
Business communication for students of tourism	8
Financial statement analyses	2, 5
Hotel management	4, 5

Table III.
E-courses offered at PCTU in 2004/2005

- *Uncertainty how to measure teaching quality and little interest in co-operation between e-course developers*. It appears to be unclear how to measure teaching quality in e-learning and also the rules and guidelines how to prepare and develop a good e-course are missing. From positive side, it can be stressed that PCTU's personnel is actively participating in different e-courses related seminars offered to lecturers. Additionally PCTU's business administration, social work and tourism and hotel management curriculums are internationally accredited. From negative side, it has to be mentioned that most of the lectures are not very eager to get feedback from students and even less eagerly want the feedback to influence their salary. Estonian e-university offered financing for new web-course development, but no module of web-courses developed in co-operation between several institutions was submitted, although it was previously stressed that these are the most expected ones. Web-learning nets between institutions are undeveloped or non-existent.
- *Learning materials and time management*. In case of ordinary learning situation, the planning and time management is being done for the student by curriculum administration department. But in case of e-learning course, the student him/herself has to take active role in it and that requires from an e-learner much more self-discipline and becomes one of major issues why students drop e-courses. The best learning results can be achieved and number of dropouts reduced if as rich as possible ICT means (web-cameras, videoconferencing, etc.) are being used and blended learning can also reduce the negative side effects of web-learning.
- *Loss of "teacher's aura" and possibility of discussion*. Many specific subjects (e.g. social work, law, etc.) require for learning a lot of discussion and quick feedback and that makes the sense of turning these courses into 100 percent e-courses highly questionable. Blended learning offers solution: lectures in virtual environment and seminars, practical assignments in classroom – in face-to-face environment.

Faculty

Ten out of 15 lectures returned the questionnaire and all departments were represented: one of them was from fishing and fisheries management department, two of them were from tourism and hotel management department, three from social work department and four from business administration department. Regarding gender: six of them are female, four male. Length of service as lecturer varied from three month to 29 years, average length of service 9, 2 years. There were offered groups based on age for answering – the sample's age distribution was as follows: up to 25 years (two people), 26-35 years (one person), 36-45 years (one person), 46-55 years (four people), 56 and older (one person) – the question was not answered in one questionnaire.

Out of ten answered lecturers, two had experience with e-courses as a lecturer and these two are from the group of young lecturers (length of service as lecturer $\sim$ three years). Mostly there have been taught compulsory courses in e-course format and these are not 100 percent e-courses, but blended courses: 20-33 percent of classroom work is replaced with e-learning options. The full length of course has varied from 4 to 20 weeks, most commonly 16 weeks. The average number of students attending

an e-course has been 45. The main reasons why lecturers had chosen the web-learning option were mentioned: students' active interest, simplifying of giving extra tasks, simplifying of getting the solutions for given assignments back and simpler to communicate with the students.

Most common problem appears to be lecturers' and students' lack of technical knowledge (while using PC and the learning platform) and usually people turned with these problems to technologist of pedagogy. It was stressed that web-learning is appropriate mean to support ordinary classroom-based learning, but 100 percent virtual environment-based learning is inappropriate for most of the subjects and "unpleasantly stiff mean of communication." One of the lecturers had participated in a course for e-teachers, but the second one had not due to lack of time. The main motivator to take part in such courses was considered to be clarifying of the payment scheme of lecturers' developing e-courses.

Out of ten answered lecturers, eight did not have experience with e-courses as a lecturer. Main reasons why they had not used e-courses as a mean of teaching were as follows: lack of technical knowledge and overall work experience as a lecturer, time and work consuming preparation process, lack of time (for preparation and supervising), health concerns (increased time in front of screen affects vision), lessened possibility for discussion, inadequate motivation/need. The most popular answer was lack of time (mentioned four times).

Five out ten answered lecturers have not participated or have started, but dropped a course meant for e-course supervisors; the reasons were either not outlined or lack of time or interest were mentioned. The biggest motivators to develop and offer more e-courses are: stimulating payment system, curiosity, help in preparation process of an e-course, conviction that number of participating students would increase and time of engagement with a course would decrease, fear of losing lecturers position, participating in a course for e-teachers. Possibility for additional remarks was usually not used – still some comments: "e-learning will develop slowly and naturally," "lack of possibility to monitor quality of teaching and control processes are the negative aspects of e-learning."

During semi-structured group interview (out of eight participants five had e-course supervising experience) every participant who had e-learning experience was asked to evaluate the e-learning from subject specific point of view, give reasons why they decided to use e-learning and major problems encountered. No new challenges, not mentioned in this paper before, were outlined – problems were the same as described in questionnaire research part. It was stressed several times that probably for most of the subjects 100 percent pure e-learning (without any face-to-face meetings) is unacceptable and the only alternative can be blended learning. Based on group discussion lecturers concluded that in comparison of ordinary classroom type of learning and blended learning as teaching means, blended learning results in better teaching and gets in ten point scale ten points in case of open university students and nine points in case of daily students (ordinary classroom type of learning being seven or eight depending on lecturer). Mostly was stressed the virtue of blended learning to enable differentiating of assignments given to students with very different knowledge in specific subject (especially mathematics-related subjects and languages were stressed).

The lecturers who did not have experience with e-learning stressed once again lack of time, motivation/need and lack of appropriate compensation system. The question of

offering e-courses in English for PCTU internationalization purpose and attracting more (international) students generated most of the discussion. That resulted in phrasing the paradox that if there is no big demand from international students side (expressed wish to come to study at PCTU) no lecturer will voluntarily start preparing a course in English (no point teaching in English subject courses to Estonian students). From other point of view: if there is no courses offered in English, no international student or group of them will show interest to study at PCTU. Thus, supply needs to come before demand in this case and to start the process – firstly, management needs to have internationalization strategy including e-learning initiatives and it should be communicated clearly to faculty, and secondly, the academic staff needs to be motivated by compensation system and helped in the course development process. The English language level among faculty was assumed not to become a problem.

Students

In total opinions of 115 students were gathered, out of which 60 have and 55 do not have e-learning experience (Table IV).

All the answered daily students (19) are second course students: eight female and 11 male – all 25 or younger. open university students are in general older than daily students (sample age between 26-35 years mostly) and work in addition to study. Out of 55 answered students eight daily and 47 open university students have not participated any e-courses. One of the reasons is also that daily social work students do not have any compulsory e-courses. The students would be motivated to choose more e-courses if there was: more information regarding e-courses, wider range of subjects to choose from, more credit points offered for an e-courses (two credit points or more), compulsory course, e-course on interesting subject, explaining on the essence of e-learning done prior to course, PC and internet connection at home. Satisfaction with the currently offered e-courses quality and number was rated mostly with answer C by daily students (A – "I am not satisfies," B – "I am mainly dissatisfied," C – "I am mainly satisfied," D – "I am satisfied").

Course, year of study		Experience in e-learning (number of students) No	Yes
Open university students	Economics, 3	3	9
	Tourism and hotel management, 3	16	9
	Fishing and fisheries management, 3	15	1
	Business administration, 3	4	20
	Tourism and hotel management, 4	3	1
	Business administration, 4	6	9
Daily students	Business administration, 2	3	10
	Social work, 2	5	1
Male		14	24
Female		41	36
Total		55	60

Table IV.
Sample characteristics

The same applies to open university students, but in addition the ones who do not have e-learning experience even do not know the term "e-learning/e-course" and the question of motivation was in most cases answered as "more information/explanation needed for answering." This also explains why satisfaction with offered e-courses quality and number was most commonly not rated.

Out of 60 answered students, 11 daily students and 49 open university students had participated at least in one e-course. Only one of the daily students had dropped out – due to technical problems encountered. All of these 11 students described their experience based on the participation of the same compulsory e-course. As the strengths of the e-course were mentioned by daily students (in brackets is given the number of the answer mentioned, in case it was more than once): quick and easy access to learning materials (three), no need for physical presence/possibility to study in a suitable location for the student (six), studying at convenient time for the student (five). As the weaknesses of the e-course were mentioned: lack of direct contact with the lecturer/slow communication (five), technical problems (opening documents, uploading documents, no internet connection) (three), possibility to be lazy for the student.

Open university students have taken on average two or three compulsory courses, believe the most problematic to be lack of direct contact and discussion with lecturer, would be more motivated to take up e-courses if the e-courses quality would improve ("e-courses are unprepared and too shallow") and number increase. Inside this group, there two sub-groups: approximately half of the 49 is disappointed and would not recommend e-learning and second subgroup is also not fully content with the courses number and quality, but are eager to have more and even 100 percent e-courses instead of blended learning ("as a working person I can't be expected to come to sit to the class so often, due to work I need to use PC and why not use free time in front of it for studying"). Most of the open university students appeared to welcome the idea of having all offered compulsory courses in blended learning form.

Satisfaction with the currently offered e-courses number was rated mostly with answer B by daily students as well as by open university students ("I am mainly dissatisfied"), satisfaction with the currently offered e-courses quality was rated mostly with answer C also by both groups of students ("I am mainly satisfied"). Motivation to sign up for more e-courses would come: if there were more passed/failed rather than exam type of courses offered, more interesting e-courses, with better supervision, with wider list of e-courses to choose from, if the content would be area of studies specific, if the students had more free time as well as PC and internet connection at home.

During group interview (ten students – five open university, five daily, all have e-learning experience) open university students stressed more the dissatisfaction with too little information offered on e-courses and its specifics from learner's side, too little number of e-courses offered and suggested that more electives, if not all of them, should be pure e-courses (no classroom meetings at all). Daily students stressed more the need to have all compulsory courses as blended courses. In case of subject courses offered in English all ten interviewees were convinced that for many of the students it would be a problem, especially for open university students.

In conclusion, students expect more interesting and study specific e-courses and more information regarding e-learning options (already during the first year of study) – especially open university students. The students are interested in taking the currently

offered elective e-courses during the second and the third year of study. Most of the offered courses should be supported by learning platform, thus students are for not against blended learning idea.

Discussion, conclusions and propositions

The research presented in the paper also has its limitations: firstly, it is based only on one business school's case, secondly – the research should have involved more lecturers (preferably all of them) and thirdly – it can be argued that the results are influenced by the fact that all of the students participated author's lectures. These limitations can have impact on the results and thus following research should involve more lecturers as well as students. Also interesting comparisons could be made, if more Estonian and also Latvian, Lithuanian business schools could be researched. Keeping in mind the limitations, the results from faculty aspects are firstly discussed.

The main problem areas for lecturers related to e-learning were: lack of time, lack of interest/motivation, lack of co-operation, compensation system does not take into account the specifics of web-learning and lecturers are concerned regarding the quality of teaching in virtual environment.

Lecturers' lack of time is due to the fact that many lecturers have workload of teaching five to nine courses. The reason is lack of academic staff (small number of graduates with PhD) and this problem is of social and political origin in Estonian society. As the salaries in transition economies are relatively small compared to developed Western countries, thus there is also no big interest of foreign academics to come to lecture in Estonia. Lecturers should ask more assistance from the technologist of pedagogy. Another solution is that lecturers develop e-courses in co-operation (e.g. management + English = management in English, etc.). Also, there is no need to take all ordinary courses into virtual environment – it is enough to use blended learning or have the learning platform as supporting mean to the course. Fourthly, it is possible to start familiarizing oneself with the e-learning specifics offering simpler, elective short term courses and after increase of skills and knowledge to develop the courses into more permanent state. Although, as the results show, students are interested in taking more time and effort consuming e-courses (two credit points and more).

Lecturer's lack of motivation and interest is probably result of inappropriate compensation system, but it is probably also related to historical and cultural background of Estonia. Use of ICT in general and computers in specific is not so common as in Western countries, where children already have a PC. Some of the older generation lecturers prefer not to communicate with students by e-mail or other electronic devices at all. In this respective, a change in thinking and attitude is required before e-learning can be fully taken advantage of in internationalization process.

There is still no good solution how to compensate development and teaching of e-courses:

> Administrators have to come up with a formula for defining the work-load of online teachers. Even colleges that have had distance education programs for some time use different formulas for determining workload for online instructors (Mupinga, 2005).

This definitely an area that needs further research.

Monitoring the web-courses teaching quality is another area that is still too little researched. Past research on quality of distance learning vary from negative

(Terry *et al.*, 2001; Institution for Higher Education Policy, 1999) to positive (Russell, 2000; Brownson and Harriman, 2000; Verduin and Clark, 1991), depending on research. Positive meaning: no difference found in comparison of students' achievements when web-learning compared to ordinary learning, in some cases even better results. Terry *et al.* (2001) found that MBA students enrolled in web-based macroeconomic and corporate finance courses scored 14 percent lower on their final exam than those students who took ordinary type of course on the same subjects.

It is also apparent that 100 percent web-based learning is not suitable for many subjects and achieving the result that all courses taught are web-based or blended learning courses cannot be the goal on itself. Discussion has and will maintain its important role as a mean of teaching and it requires quick feedback and responses that only during face-to-face meetings can be achieved. Students' and lecturers' preference to have blended courses instead of pure e-courses can also have cultural reason: Estonians are rather collectivistic in their thinking and prefer to work in a group.

As internationalization requires e-courses offered in English, the author believes this to be at least for some lecturers a challenge. Although, the research results of this case study do not stress it, due to historical and political events English is not generally spoken by Estonians. More commonly, Russian is the second language and there are several generations of people who have never studied English at school (they have been taught German).

In conclusion, it can be said that out of faculty's main problem areas related to use of e-learning in internationalization only three (lack of time, lack of interest and teaching in English) have specific culture, history or policy development reasons. The rest of the challenges are also known in developed economies, which have longer tradition of using e-learning.

Students appear to have interest in e-courses, but the level of knowledge regarding specifics of web-based learning as well as about e-courses offered seams to be low. This is especially problematic case for open university students for who in the first place the e-courses were meant. More information should be given regarding offered e-courses during ordinary face-to-face courses, as this appears to be the quickest and preferred way of receiving information.

Compared to students of developed countries Estonian students have had relatively short time to use personal computers and internet as learning tools. Thus, their general knowledge regards to ICT and related software is not very high. As seen from the research results, most of the problems described are related to the skills of using ICT and not having enough opportunity to use internet. In addition to historical developments, the general low economic level is still affecting some of the students: not all of the students can afford having personal computer and internet connection at home. But the economic situation of students is improving constantly and in recent years, the banking sector has started to offer loans even to open university students.

Researched students who had experience with e-learning were more critical regarding the number of offered e-courses, especially open university students. Students are interested in taking more elective e-courses during second and third year of study and support the idea that most of the courses should be blended learning courses and not 100 percent web-based. Firstly there should be explored the option of PCTU's students' to participate in the e-courses of Tartu University as there is currently offered a least 140 web-based and blended learning courses. This would

widen the selection possibilities of students as the development of PCTU's own new web-courses will take time.

The research results supported the most commonly stressed strength of web-based learning (LaBay and Comm, 2003; Ceraulo, 2005; Mupinga, 2005; WCET, 2004) – students, from high school to PhD study level, can choose the suitable time and place for study and research. The main weakness as also pointed out in previous research (Boettcher, 1999; Mupinga, 2005) was lack of personal contact (face-to-face meetings) with lecturer and slow feedback. Solution can be in hiring more people or appointing some of the graduate students to assist the lecturer in web-based teaching, also blended learning instead of 100 percent web-based learning can improve the situation.

Currently most needed is management's clear communication that e-learning will be the strategic tool for internationalization, timeline for action and also fear amount of time for e-course preparation as students do not rate the currently offered e-courses very highly in respect to quality and all the e-courses need to be prepared in English. In the first stages of the strategy and its implementation, the faculty will probably raise the question of why to invest much time and effort into developing e-courses in English, if there is nobody we can offer them – based on the research results Estonian students are not interested in taking subject courses in English. In addition to lack of interest, historically many of the older generation students (common problem for open university students) have learned German as first foreign language at high school, thus their level of understanding English is very poor or non-existent. Answering the question of faculty has to be a high priority in managements' agenda, if changes want to be seen in e-course development. The explanation requires in addition support by compensation system before the new strategy can fully be enacted.

Based on current analyses, it can be concluded that PCTU has potential using e-learning effectively in internationalization. Expansion Model B (Table I) has been used for several years, but there are many problems yet to be solved before Model C can be fully used. Before the next step also analyses of external environment needs to be done and a marketing plan formulated.

Futher research should be done on the following topics: how to measure e-courses quality, how to measure work-load of an e-teacher and what kind of compensation system would be appropriate for teachers of e-courses (taking account that there are pure e-courses and blended courses offered).

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