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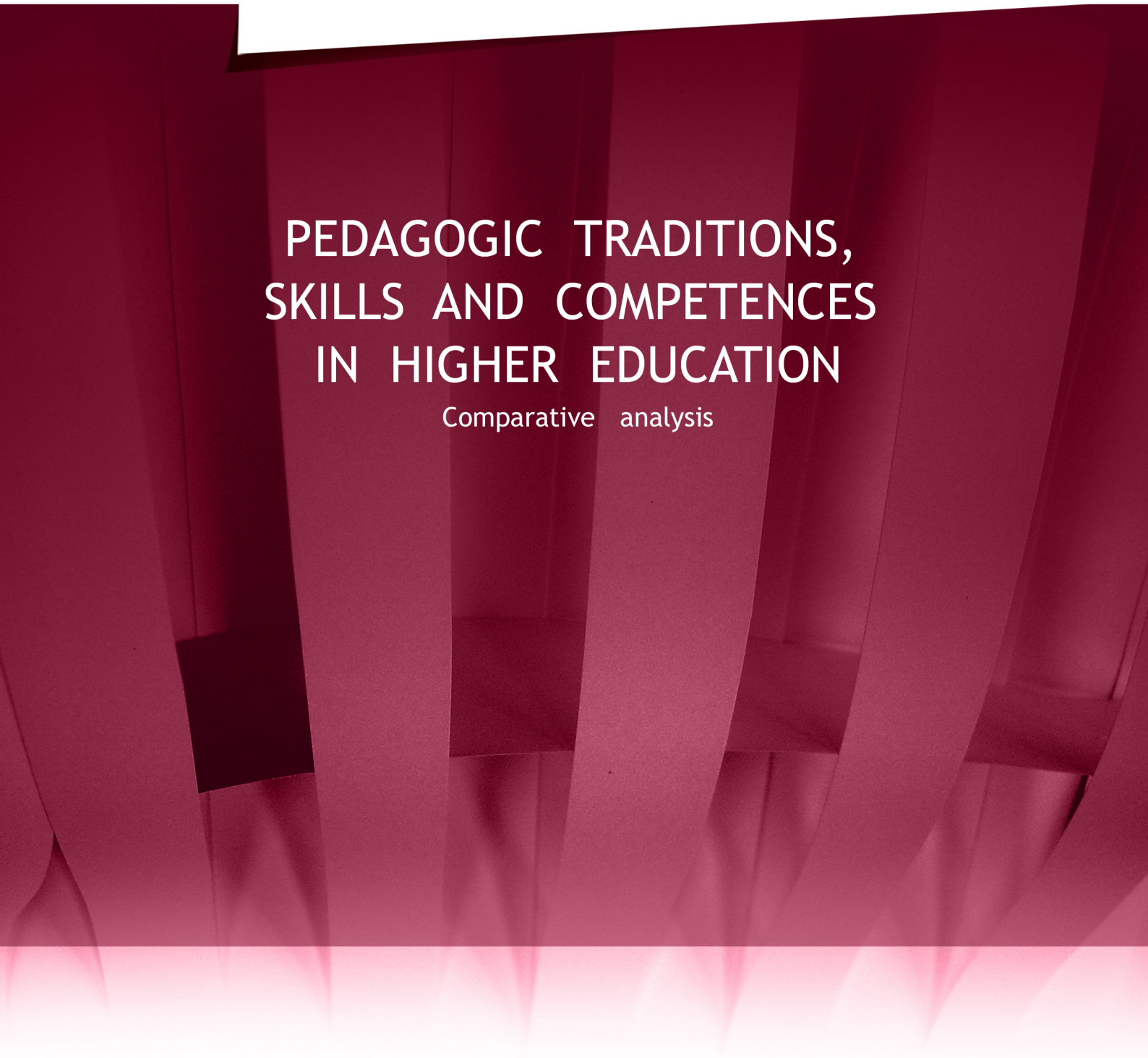
WETEN

PEDAGOGIC TRADITIONS, SKILLS AND COMPETENCES IN HIGHER EDUCATION

Comparative analysis



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Comparative analysis

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Preamble

Both the Lisbon Strategy and the Bologna Process have brought enormous challenges to the educational systems in general, and to Higher Education (HE) in particular, not only among European Union (EU) countries but also in other countries that are outside the EU. The collaboration between different institutions with different educational systems can optimize the success of initiatives such as the ones referred to the design of the curricula based on a student-centred approach to learning, the use of ICT in the context of teaching and learning and the training of HE teachers. Taking this into consideration, we intend to present the first output of the European project WETEN-Western/Eastern Teacher Education Network aiming to analyse the pedagogic traditions in four EU universities. This study has two main objectives. The first one is to compare the results in the EU countries aiming to understand the similarities and differences in what regards seven dimensions: (i) institutional mission and strategic objectives; (ii) the Bologna process implementation; (iii) educational model; (iv) institutional implementation of the learning model(s); (v) ICT and learning enhancement; (vi) training of HE teachers, and (vii) quality assurance. The second objective is to promote a round table discussion with HE institutions of two countries outside the EU where the last ones can re-engineer their training processes and their curricula taken into account the knowledge about the practices of the European partners. In this report we will describe the seven dimensions presented above.

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Introduction

Introduction

Today, we acknowledge a growing awareness of HE institutions about issues of pedagogy, academic success, innovative teaching and learning strategies, quality assurance, and also teachers' training (Huet & Costa, 2006; Ramos, Costa, Tavares & Huet, 2006; Huet et al, 2008). The Bologna Process show concern about those subjects and may be considered as an important landmark reflecting (i) the enormous challenges asked to the educational systems, and (ii) the conceptual changes regarding the quality of teaching and learning at HE settings. Thus, it is required a bigger involvement from each stakeholder of the educational process so HE systems can optimize the success of several initiatives that must be undertaken to achieve excellence in HE teaching, learning, assessment, supervision and research. Moreover, that involvement and interaction must be understood and improved not only within one HE institution, but also creating reflective networks between several HE institutions.

Within this purpose, the authors intend to present the first outputs of the European Project WETEN (Western/Eastern Teacher Education Network). Even though this is a network of European university teachers, this may be considered an example of a community of practice particularly focused on engaging academia in the enhancement of teaching and learning, so that best practices can be shared. As Johnson (2001) stresses communities of practice are considered very important to promote several types of connections, active learning and participation, collaboration in the decision-making process, the creation of solutions suited to specific or broader contexts. The same author quotes Liedka who "describes communities of practice as individuals united in action" (Johnson, 2001, p.46). Consequently, in sharing experiences, strategies and ideas, even though grounded in specific HE traditions and cultures, universities may benefit from collaborative discussions:

> *"The learning that evolves from these communities is collaborative, in which the collaborative knowledge of the community is greater than any individual knowledge" (Johnson, 2001, p.46).*

Consequently, a co-construction of knowledge will be an evidence of the dynamic engagement of the individuals in contributing and developing a "collective learning" (Wenger, 2006). Thus, as Cambridge, Kaplan and Suter (2005) synthetically refer, communities of practice are important because they (i) connect people; (ii) provide shared context; (iii) enable dialogue; (iv) stimulate learning; (v) capture and diffuse existing knowledge; (vi) introduce collaborative processes; (vii) help people organize; and (viii) generate new knowledge.

The WETEN community of practice is particularly concerned in reflecting, discussing, sharing experiences and enhancing the quality of HE teaching and learning. Therefore, certain subjects are receiving greater attention and importance: (i) student-centred educational models; (ii) ICT (Information and Communication Technology) strategies to improve the learning experience and to focus on students' autonomous work; and (iii) training of HE teachers to improve their pedagogical thinking, competences and skills.

Teachers must be no longer considered as the "masters" and transmitters of knowledge. This teacher-focused perspective must gradually be shifting to a student-centred approach. Consequently, HE teachers possess a great responsibility of creating a learning environment which must be centred in students, acting as facilitators, motivating and guiding the students in the learning process (Stes, Clement & Van Petegem, 2007). Consequently, the quality standards

that define HE teaching and learning take into account (i) the student-centred focus of the teaching and learning process; (ii) the pedagogical skills and competences that teachers have to demonstrate; (iii) the pedagogical strategies that must be explored and enhanced; (iv) the learning environment that must be created; and also (v) the institutional culture and environment which must support the creation of an appropriate environment and the teachers pedagogical actions and training (Henard & Leprince-Ringuet, 2008).

Consequently, ICT pedagogical strategies can change the learning environment, modify the nature of interactions and relationship with knowledge, and expand the perspective of resources delivery, accessibility and understanding. In fact, we may observe an increasing number of studies that focus on the benefits of using ICT tools, activities and environment (Tavares et al, 2003; Ramos, Costa, Tavares & Huet, 2006; Huet et al, 2007). Ramos et al (2006, p.2) stresses that:

> *"ICT promotes a set of benefits to students but also to teachers, providing means for enrich student-centred learning experiences (…) thus resulting in the acquisition of new knowledge"*.

Al-Fadhli and Khalfan (2008) underlines that e-learning environment, for instance, requires that students engage actively in the learning tasks and activities, taking responsibility for their own learning. As a consequence, students' critical skills will be enhanced.

Thus, to face this "new" pedagogical reality, teachers must be actively engaged and motivated. Even though it is clearly stated that initial and continuous training for faculty member at Universities is not yet a priority in most of the European countries (Kálmán, 2008) and that "academia is still reluctant to enrol these courses" (Huet & Costa, 2006, p.5), it is urgent to promote initiatives that support teachers' pedagogical skills and competences. Different authors (Gibbs & Coffey, 2004; Trowler, 2005; Postareff, Lindblom-Ylänne & Nevgi, 2006; Huet et al, 2008) underline that teacher training helps academics (i) to face the pedagogical new challenges and the HE new reality; (ii) to adapt themselves to new requirements imposed by the new students' generation and also by the labour market; (iii) to develop innovative skills, competences and attitudes; (iv) to reflect about their practices; and (v) to improve their practices, developing new teaching and learning strategies, (re)designing the curricula based on competences and learning outcomes. Therefore, it helps to promote the students' academic success, enhancing the learning experience.

Previous definitions

Previous definitions

In order to classify and better understand the different strategies being held in the university partners, it is at most important to define, for the purpose of this report, the concepts of distance learning, blended learning and face to face (f2f) learning. These concepts are known for having different kind of interpretations depending on the context or the researcher. Since different judgments can lead to misunderstandings when reading this report, it is relevant to explain our vision of these different concepts.

Distance learning or distance education is a strategy on education that is focused on the designing of pedagogy, technology and educational materials with the aim of delivering education to students that are not physically on site. Thus it is sometimes called e-learning, because it is to be carried out by using electronic communication tools which are designed specifically to be remotely used.

The communication between teacher and student is carried out by exchanging printed or electronic media, or through technology that allows them to communicate in synchronous or asynchronous environments and through other online ways (Holmberg, 2005). We agree with Keagan (2002) perspectives when he stresses the importance of both interaction and communication between an instructor and learner. For this author, it may be called distance learning when there is (i) an usual separation of teacher and learner throughout the length of the learning process, (ii) a role of educational organization in the planning and preparation of learning materials and in the provision of student support services, (iii) available to all students enrolled the same technical media to unite teacher and learner and carry the content of the course, (iv) the provision of two-way communication so that the student may benefit from, or even initiate, dialogue, and (v) the absence of a learning group throughout the length of the learning process (people are usually taught as individuals rather than as groups).

On the contrary, f2f learning is an educational strategy where the pedagogy and teaching strategies are focused on being physically in the same room. Even though there are more traditional aspects on this educational strategy because it is focuses more on the role of the teacher (the main actor on the educational process), some educational pedagogical strategies are using ICT to develop innovative f2f sessions, using whiteboards or simulators to promote more active teaching and learning. The use, per si, of ICT and remote tools, like LMS or e-Portfolios, does not guarantee a distance learning strategy. The teaching materials have to be designed focusing on the potentialities of a virtual presence.

On the other hand, a blended learning strategy usually congregates aspects of distance learning and f2f learning, offering to the teaching and learning process the benefits from the two other strategies. Oblinger and Hawkins (2005) refer that blended learning approaches are hybrid courses that integrate f2f and online components. For these authors, the class may meet f2f once or twice a week, with the remaining class time being spent online. When there is on-site presence for any reason, including examinations, it is considered to be a hybrid or blended approach. For Graham (2005) this approach will combine f2f instruction with computer-mediated instruction with the ultimate aim of providing practical opportunities for learners and teachers to make learning more independent, useful although sustaining the idea that in some circumstances it could be important f2f sessions.

Methodology

Methodology

1. Sample

The participants of the Survey explored in this paper are constituted by the 4 HE institutions of the EU countries: Portugal, Belgium, Sweden and Lithuania (Table 1).

Table 1. WETEN participating partners.

University	Country
Kaunas University of Technology	Lithuania
State Pedagogical University "Ion Creanga"	Moldova
National Technical University "Kharkiv Polytechnic Institute"	Ukraine
University of Aveiro	Portugal
Hasselt University	Belgium
"Alecu Russo" Balti State University	Moldova
Tiraspol State University	Moldova
"B.P.Hasdeu" State University of Cahul	Moldova
Timsoft	Romania
Royal Institute of Technology (KTH)	Sweden

Within the WETEN project, and besides the 4 HE institutions of the EU countries, there are five western universities from two different countries: Moldova and Ukraine. Moreover there is also one Romanian company, Timsoft, a software firm specialized in e-learning and Web Design.

2. Method

The research method followed is the case study with multiple cases of analysis (constituted by 4 Universities) since we will analyse "a contemporary event that cannot be manipulated" (Yin, 1994, p.8). Additionally, our research questions are centred on the "how" and "what" of a contemporary reality (Yin, 1994, p.9). The design of a survey template guided researchers from the participating institutions to answer the questions that underline our research:

i. What is the educational model or concept implemented in each institution?
ii. How is the educational model implemented by the institution/ faculties/ departments/ curricular units?
iii. Which ICT enhanced learning initiatives are taken and how are they enhancing the quality of the learning process?
iv. What are the guidelines for the initial and continuous training of HE teachers?
v. How was the Bologna Process Implemented in each institution?
vi. What steps for Quality Assurance are undertaken by each institution?

We used a CAQDAS (Computer Aided Qualitative Date Analysis Software): NVivo8. This software serves as a catalyst for the review process, which promotes better use, organization, search of patterns, systematization of research and relationship of data across categories (Richards, 2002; Johnson, 2006).

Data Findings

Data Findings

1. Contextualisation of the 4 case studies

Since we are following a case study methodology with 4 units of analysis it is crucial to contextualise the studies: we are analysing different educational system with their own specifications. Thus, as we can see in Table 2, the older institution is the Royal Institute of Technology (KTH) and the youngest the University of Aveiro (UA). The number of students is different. Three groups emerged: smaller institutions (UHasselt), medium institutions (KTH and UA) and big institutions (KTU). The 4 institutions offer various undergraduate and postgraduate programmes of study. The ratio students/members of staff are considerably higher at KTU and at KTH. All the institutions have their courses designed based on ECTS with exception of the KTU that needs to transform their National Credit System to the ECTS (60 ECTS is 40 National credits in Lithuania). The grading criteria are not uniform, ranging from a quantitative 1-20 scale, to 1-10 and a more qualitative scale: A-F.

Table 2. Description of the 4 HE institutions.

Universities	Year of Foudation	Number of Teachers	Number of Students	Ratio T/S	Credit System	Grading Criteria	University Studies
Hasselt	1971	530	3000	5,7	ECTS	1-20	B/M/D
KTH	1827	918	13400	14,6	ECTS	A-F	B/L/IM/D
KTU	1920	1045	16400	15,6	National Credit System	1-10	B/M/D
UA	1973	1510	14701	9,7	ECTS	1-20	L/IM/M/D

Legend
B-Bachelor
L-Licenciate
IM-Integrated Master
M-Master
D-Doctorate

2. Educational model/concept

Table 3. Number of data retrieved from the educational model/concept dimension.

	KTH	UA	KTU	Hasselt
a.Educational Model/ Concept Description	0	0	0	0
a.1. Cooperative learning	0	3	0	2
a.2. Inquiry based learning	0	2	0	0
a.3. No specific model	5	2	1	2
a.4. Project Problem based learning	1	2	0	1
a.5. Supported self learning	0	0	0	8
a.5.1. Tutoring	0	2	0	1
b.Type of learning	0	0	0	0
b.1. blended learning	0	1	1	2
b.2. distance learning	0	1	3	0
b.3. face to face	2	1	4	2
c.SWOT's	0	0	0	0
c.1. Opportunities	0	2	0	1
c.2. Strenghts	0	3	0	1
c.3. Threats	0	2	0	1
c.4. Weaknesses	0	4	0	1

The first dimension - Educational Mode/Concept refers to the global institutional perspectives concerning: the educational model description, the type of learning and a SWOT's analysis of the educational model and best practices being held in each partner institution. Table 3 presents the amount of references retrieved and analysed in each sub-category per university. This means that the UA allude three ideas related to cooperative learning sub-category.

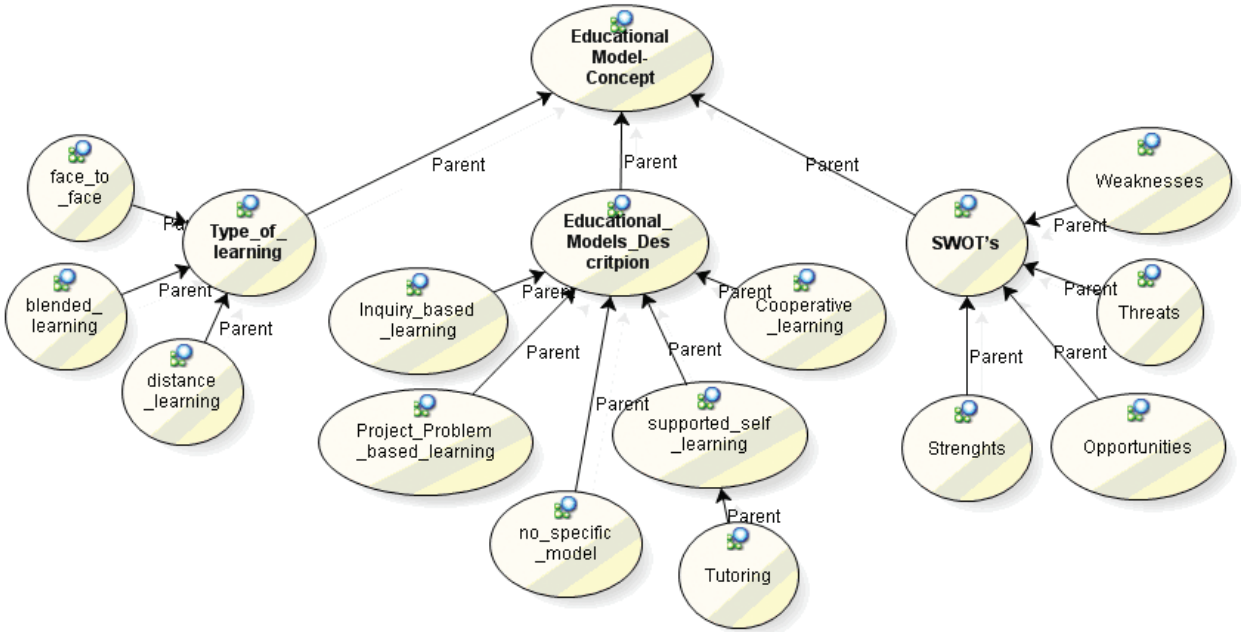

Figure 1. Tree for the educational model/concept dimension

The category "educational model description" refers to the description of educational models/ concepts (pedagogical approach to teaching and learning) that are implemented in the courses delivered by the University/ Faculty /School /Department.

The category "type of learning" refers how the learning process is mediated by the teacher and student: f2f, distance or blended learning.

The SWOT's category explores the "Strengths, Weaknesses, Opportunities and Threats" of the implemented learning model or concept.

2.1. Educational Model/ Concept Description

At **KTH** no specific learning model is implemented at the institution:

> *"(…) at KTH no coherent universal pedagogical model has been implemented. The models at KTH are more local (except Architecture). This makes it difficult to state what pedagogical model KTH uses. And the situation is similar at must technical master programs at different universities in Sweden."*

> *"Each school implements its educational model. However, then each department - and in reality each course responsible faculty member - is in charge of course design, implementation and development (…)"*

> *"Some schools, some departments try to implement pedagogical ideas. Mostly, this fail. Due to the strong independence of faculty members, in reality it is the faculty member responsible for a course who implements his/her pedagogical model. And for most of them the pedagogical model is the one they met as students about 30 years ago. This is the reason why it takes a teacher generation to change the pedagogical concept as long*

as there is no coherent university pedagogical leadership interest in these matters. (In principle, female faculties are more positive to try new pedagogical models.)"

One exception of this is the KTH School of Architecture and Built Environment which already (in the 70's) introduced project work as an integrated educational model.

At the **UA** there is no specific learning model: each department or member of staff is free to choose different educational models. Although, the institution follows a learning concept of teaching centred on the student:

"Considering the learning concept, the University of Aveiro follows a student-centered model, where the paradigm of the teaching and learning process is based on the student. (…) The teacher is seen as a facilitator and the student is the active agent that pursues knowledge and the development of his competences".

Therefore, within this model, we may find the following specific guidelines:

I. *"To promote and improve students' autonomy;*
II. *To help students to develop transversal skills and competences to face the demands and challenges of the labour market;*
III. *To increase students' critical reflection;*
IV. *To increase lifelong learning competences in the students."*

There are as mentioned above experiences of running different learning models at the institution. There is one Polytechnic School associated to the University that follows an Inquiry and Problem based-learning approach: the ESTGA ("Escola Superior de Tecnologia e Gestão de Águeda") – Higher Education Polytechnic School of Águeda:

"In fact, the project-based learning is an important strategy:

- *To enhance students autonomy and awareness of their own learning needs;*
- *To develop different kind of skills like the following: working in groups, making presentations, tackling the problem, writing a report,;*
- *To prepare students to work in real life situations (solve a problem, decide a possible solution based on research, implement the solution, and evaluate the process), enhancing their own personal and professional capabilities and potentialities."*

hence:

"There was a great agreement between students and teachers, evidencing a general positive acceptance of project-based learning. The researcher pointed out certain aspects:

- *Integration of knowledge, theory-practice relation, new students' attitude towards knowledge; preparation for real professional activities.*
- *Opportunity to competences development under teachers' supervision; new roles of teachers and students;*
- *Enthusiasm and motivation in relation to projects; personal commitment;*
- *Time management learning; teamwork skills development; study time at school."*

Also, the Bachelor in Biomedical Sciences follows a PBL approach:

"PBL is based on (i) mutual trust between students and teachers, (ii) creativity, (iii) imagination, and (iv) an evaluation made by both actors in the process (students and

teachers). It implies a depth individual transformation. It will help students (i) to conduct research, (ii) to integrate theory and practice, and (iii) to apply knowledge and skills to develop a viable solution to a defined problem (Savery, 2006, p.9).”

Another example is the cooperative learning that takes place at some curricular units at the Department of Civil Engineering and in the Department of Health Sciences:

> Unidade Curricular Mecânica dos Solos I, Licenciatura em Ciências de Engenharia Civil e em Engenharia Geológica – Curricular Unit Soil Mechanics I, Bachelor in Sciences of Civil Engineering and in Geological Engineering

In cooperative learning students are brought together in small groups. They work together, collaboratively, to achieve a common goal. The group will function well, when the fundamental principles of cooperative learning exist: (i) positive interdependence; (ii) individual accountability; (iii) social competences; (iv) face-to-face interactions; and (v) evaluation of the group procedures.

When cooperative learning is successfully achieved, by students and teachers, we will observe that students:

- *Come closer to problems of the “real working life”;*
- *Increase their levels of responsibility, engagement in different activities and several communicative and social skills;*
- *Improve their problem solving and argumentative skills;*
- *Improve their evaluative skills (auto and hetero), and their critical thinking;*
- *Show a greater motivation and commitment to acquire new knowledge, to develop new competences and consolidate others.*

Those aspects will improve the quality of teaching, learning and evaluation process, both in a students and teachers perspective.”

> Licenciatura em Ciências Biomédicas – Bachelor in Biomedical Sciences

At this course cooperative learning implies that each member of the group will have his own role within the group to achieve a common objective. The roles will rotate within the group members.

There is also some Curricular Units at the Department of Chemistry and Biology that follow an inquiry-based approach:

“Some research have been conducted by researchers from the Department of Education concerning the development of questioning in some Curricular Units in some Departments: Chemistry and, more recently, Biology.

The major goals the researchers want to achieve with this teaching and learning strategy is to enhance certain key-skills, like the following (Pedrosa de Jesus, Teixeira-Dias & Watts, 2003):

- *Autonomy and responsibility;*
- *Communication skills;*
- *Teamwork;*
- *Problem-solving;*
- *Critical thinking;*

Continue to learn and to question

In fact, several research highlight that this technique promotes the quality of teaching and learning, when properly developed and stimulated by the teacher. Therefore, it is important to create a culture of inquiry. In fact, students' questions can diagnostic their learning and conceptions. Therefore, questions can be a regulator of the teaching and learning process, because "provide opportunities for teachers' insight into student thinking and conceptual understanding" (Pedrosa de Jesus, Almeida & Watts, 2004, p.532). At the same time, students can also have the opportunity to evaluate their own conceptions and understanding."

At the **KTU** there is also no specific model of learning implemented at the institution:

"University's departments are very flexible to choose the educational model as there are very different departments in KTU. We couldn't compare such departments like Chemistry and Business and Management, as delivered modules are very different and for example a lot of teachers and trainers (T&T) from Chemistry faculty are not going to implement e-learning as it is difficult to develop course online and to implement different ideas using ICT. So different departments use e-learning in different ways using different tools and using two different environments supported by KTU (Moodle and Vista CE6)".

At **Hasselt University** another experience emerges: the university promotes and enables student-centred approaches and active ways of learning. The proposed educational model/ concept can be summarized as "From guided to autonomous learning". However, faculties and staff may choose different learning strategies based on active ways of learning":

"Our first Rector was expert in new educational models and introduced his new ideas in the university already in the seventies.

In our faculty of Business economics we initiated also the idea of educational innovation several years ago. A small team of professors brainstormed about the problem and decided to implement the new model: guided self-learning. In fact they had in mind the model already developed in the University of Maastricht. In this university they tried to implement the model: problem based learning; We did not follow this model, because we want still to introduce the students on a teacher directed way in the learning content. And based on it we try to organise learning activities that are student centred self learning activities, but which are often initiated and controlled and supported by our staff members."

"Mostly one starts with an introductory lecture; students process the subject matter based on instructions (supported by a study trajectory); discussions in small groups follow. This may be supported or supplemented by other learning forms, for example exercises sessions in small groups, ... Gradually students solve problems with an increasing degree of complexity and work on (group) projects."

"Staff members may be creative in finding activities which fit best the learning content, the style of the staff member."

Accordingly, the Faculty of Business and Economics has been very active in promoting this educational model by implementing self-learning activities, which are controlled and supported by staff members with a strong focus on e-learning:

The professor organizes a limited number of lectures to give the students a good overview of the course topics and to explain some complex issues more in detail. The total number of

these contact hours are limited to less than 30% of the students learning time. The biggest part of the learning process consists of a mix of different learning activities initiated by the professor in the frame of an assignment or a project."

"The self paced learning activity can be organised by the learner individually or he or she can join a team of colleague-learners to assimilate the content of the course. In some courses the learner has to read and study the textbook. In some other cases the self-instruction is organised as an e-learning activity. The professor structures the basic course content as course modules covering a number of topics and delivers it as electronic content modules. These e-learning modules are presented in an attractive way and are composed of text, graphics, sound, images or video fragments. In most cases, this type of self-instruction is limited to the learning of the basic theory of the learning topics.

More specifically, at post-graduation courses, the Faculty of Business and Economics follows a project-based learning approach in some of their Master and PhD programmes:

"From a conceptual content viewpoint, the most effective way of learning is to confront the students with business case studies and to participate in business projects. Especially in the master year(s) of the study, the learning activities are taking the form of real projects from business practice. Business problems will be solved by the teams of students and business professionals are co-operating as project leaders. Professors and assistants are supporting the students who can ask for help and for advice. The end product is always a paper to be written by the team."

"This project based work is learning-team centered. We believe in it because the students are learning in co-operative groups and have demonstrated an ability to generate higher-level reasoning strategies, greater diversity of ideas, more critical thinking and in-creased creative responses. An important second order benefit is the fact that it fosters the growth of effective team-work, the development of interpersonal communication and listening skills. It is believed that the proposed approach encourages the student to find additional information, to share with other students and to expand own knowledge. Discussions are organized as a classroom session or can be induced by the instructor, during the course. The student can be partly responsible for the course content too. The students co-operate with the teacher in creating some parts of the course text based on an individual study of books and periodicals in the course domain. Students can add some personal information documents to the course to share with colleagues."

2.2. Type of learning

The learning instruction developed in the four institutions is based on face-to-face (f2f) sessions enhanced by ICT. Nevertheless, different departments/faculties or members of staff can run blended or distance learning courses or modules. This is the case of **KTU** E-Learning Technology Centre where most of the Courses offered are based on a distance learning approach. In the case of the **UA**, there is one distance based undergraduate course, accountability, which was recently created. The postgraduate courses are usually b-learning but they have few f2f sessions, especially doctorates. Blended learning is also the learning instruction used by the Faculty of Business and Economics at **Hasselt University** in order to promote self paced learning activities and in the communication and information sharing of the team members in their project work.

2.3. SWOT

In their SWOT analysis regarding the educational model/concept, the **Hasselt University** refers as:

- Strengths: *"students like the educational model, because of the enhanced flexibility";*
- Weaknesses: *"students are responsible for their own process";*
- Opportunities: *"staff members can be very creative in the organisation of the learning process";*
- Threats: *"staff members are not motivated to be creative in finding attractive and effective learning activities".*

On the other hand, the UA states:

- Strengths: *"Its importance in enhancing students' experience, and above all in improving teaching and learning methodologies and, thus, the basis for the student to be an autonomous (lifelong) learner";*
- Weaknesses: *"Time is not enough to experience new teaching and learning methodologies and to make a suitable balance of them so that the less positive aspects can be improved";*
- Opportunities: *"The implementation of educational models/concepts suited to the teaching and learning process gives both students and teachers the opportunity to enhance the process itself. Also, this is an opportunity for Universities to invest in their teachers' professional development, concerning a more pedagogical and didactical point of view";*
- Threats: *"Many teachers do not have pedagogic basis to improve new teaching and learning methodologies".*

The other partners did not to respond to the SWOT analyses.

3. Institutional implementation of the learning model/concept

Table 4. Number of data retrieved from the institutional implementation of the learning model / concept dimension.

	KTH	UA	KTU	Hasselt
a. Support for students	0	0	0	0
a1. Academic information	2	1	1	0
a2. Strategies for success	9	1	1	3
b. Support for teachers	0	0	0	0
b1. Teacher training	1	1	0	1
b2. Helpdesk	1	1	0	1
b3. Other initiatives	2	2	2	1
c. Teachers' involvement	0	0	0	0
c1. Curricular changes	0	0	0	1
c2. Teaching and learning changes	1	1	0	1

The second dimension – Institutional implementation of the learning model/concept - refers to the implementation of the learning model/concept in a general and institutional sense, concerning: support for students, support for teachers and best practices the University has in mind to promote the learning model/concept. The KTH was the most active respondent in this dimension referring nine references to sub-category strategies for success.

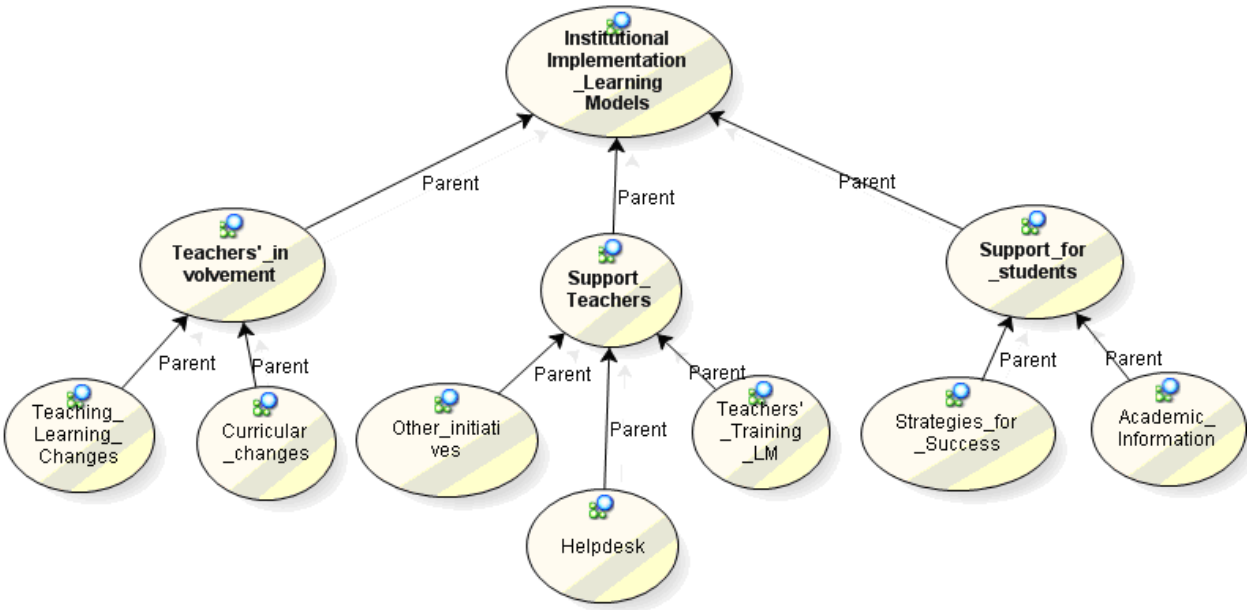

Figure 2. Tree for the Institutional implementation of the learning model/concept dimension

The category "support for students" refers to the institutional support given to students to improve the academic success.

On the other hand, the category "support for teachers" relates itself to the institutional support given to teachers, concerning strategies to improve their pedagogical skills and training.

Finally, the category "teachers' involvement" refers to the strategies implemented by the Institution to increase teachers' involvement to implement Institution/ School/ Faculty/ Department learning models.

3.1. Support for students

a1. Academic information

The **UA**, **KTH**, **KTU** and **UH** provide students with academic information, especially regarding the courses available. This information available may be more or less generic.

The **KTH** refers:

"Students are always informed through the schools and course accountable."

The **KTU** also refers to "open door" days. The same initiative is undertaken at the UA.

"Students are always informed through the schools, information booklets, university and other with studies related information web pages. There are also frequently organized "open doors" days, when potential students may come to the faculties and take part in open discussion sessions with teachers and faculty managers."

Concerning the **UA** experience, it is observed that there are, at the beginning of the academic year, a week to receive new students and their families.

"The main objectives of this reception are (i) to approach the undergraduate students (and their families) with a new reality, which sometimes can be very hard; and (ii) to give some general information about the University's reality, concerning the services available and the demands they will have to face in the process of teaching and learning.

Furthermore, there have been some research projects at the University of Aveiro (in the Department of Education) which intended:

- *To highlight the factors that influence the success (or failure) of undergraduate students;*
- *To develop strategies to improve the success of undergraduate students to improve the teaching, learning and research processes;*
- *To involve students' parents in process of integration of the young adults in the University life."*

UHasselt students are being informed via the student intranet:

"All information about the courses can be found in the e-study guide. The scheduling personalised to their personal study program and also for their exams is also available in intranet. So even small changes in schedule are always up to date."

"In each course the teachers are using the LMS environment to announce some info or changes about their courses sessions and even are pushing the info via an intranet mail system or from within the LMS, personalised to the students group registered for the course."

a2. Strategies for success

The strategies which are undertaken by the Universities to promote the improvement of personal, social, psychological, academic, and institutional success of the students are not very referred and/or described.

Concerning the learning concept followed at the **Hasselt University**, this partner refers to a "tailored guidance" available to students:

"Within the framework of the educational concept and through tailored guidance, the university cooperates with the student in order to improve his study approach, study methods and study planning to improve his chances of success. We particularly pay attention to young people that speak a foreign language or multiple languages at home."

On the other hand, **KTH** generically mentioned a mentor system

"A mentor system for new students has been developed and evaluated."

The **KTU** point out the existence of the e-learning methods to support students and to enhance their academic success, accordingly to the ICT tools which are very important in the teaching and learning process:

> *"(…) develop teachers/tutors and students' support system by implementing e-learning methods and tools, as well as by developing and delivering e-learning modules; to support and improve e-learning technologies in studies process"*

Finally, the **UA** mentions the importance of monitoring the quality of teaching, learning and supervision to enhance and support students to achieve a great level of success.

> *"(...) the University and the Postgraduate Office is aware of the changes in postgraduate scenario: the number of postgraduate students per doctorate researcher; the quality of postgraduate supervision; the conclusion rates. Therefore, the University reveals that it is important to monitor the quality of the teaching, learning and supervision process. However, in the near future the management staff will reveal the main action guidelines which may be considered."*

3.2. Support for teachers (teacher training, helpdesk and other initiatives)

B1. Teacher training

The institutional support given to the teachers may be of several types: teacher training, helpdesk available and other initiatives.

However, as we can conclude, the support for teachers mentioned by the institutional partners is very generic. Concerning the teacher training, we will not explore them, because, as the partners mentioned, this topic will be considered more in detail in the next section.

b2. Helpdesk

Considering the helpdesk, not all HE institutions possess one. Nevertheless, the **KTH** refers:

> *"Learning Lab at KTH plus a special secretariat plus Study Program Accountable."*

On the other hand, though the **UA** does not have a helpdesk, it has a Research Laboratory - the Laboratory of Educational Quality Evaluation in Higher Education – which concerns are focused on the improvement of teaching, learning, assessment, research and supervision process, as well as the enhancement of the quality of those experiences.

b3. Other initiatives

Hasselt University highlights some strategies to implement the educational learning concept/ model in the institution. For the Faculty of Business and Economics the partner states:

> *"To start the staff members were introduced in the [educational] concept via a few meetings and presentations.*
>
> *Two educational assistants were working fulltime in supporting staff members on it.*
>
> *They also developed some practical rules on point of minimum and maximum hours contact to programme in the learning process.*

They developed the idea of "study trajectory". All teachers have to develop a plan of all courses activities preceding the start of the course. It has to be made available in Blackboard system.

All information is available and also supported in the learning process of the students."

Concerning the approach presented by the **KTH**, this partner only refers that:

"Central planning group, working groups, central seminars for teachers, school seminars, course accountable responsibility."

The same seminars are also mentioned by the **KTU**, which are organized by Office of Academic Affairs:

"The main objective of this Office is to organize and implement activity of the first and second levels of university studies planning, accounting and quality supervision; to analyze, summarize and collect information about student admission to University for the first and second level studies, study programmes, studies, and to perform teachers' pedagogical work accounting and demand planning."

Finally, the **UA** reveals that, in the near future it will be created a Centre, within the University, and especially within the Laboratory for the Evaluation of Educational Quality in Higher Education, with the next goal:

"to support teachers, students and supervisors to contribute to the enhancement of teaching, learning, supervision and evaluation. This Centre will be a support for the different agents responsible for enhancing of the teaching and learning process, and may monitor the pedagogical process."

3.3. Teachers' involvement

c1. Curricular changes

Regarding this category, we conclude that the curricular changes are mentioned by all partner, but particularly related to the challenges and changes asked by the Bologna process, which interferes in the institutional implementation of the learning model/concept. Thus, the "curricular changes" refers to the strategies implemented by the University to increase teachers' involvement and commitment in changing of the curricular design, but in a broader perspective.

c2. Teaching and learning changes

Again, this category is closely related to the challenges and changes required by the Bologna process, which is also involved in the institutional implementation of the learning model/concept.

The experience at the **UA** clearly states this:

"(…) there were many discussions in which members of staff and teachers were involved. In fact, the teachers were involved in every phases of the process: from the change of curricular design to the improvement of teaching and learning process in their courses/Curricular Units. This shows that the University of Aveiro was extremely concerned to not only "to pass the message" but especially to promote changes on teaching and learning

practices. These changes were made in a perspective "top-down", which had consequences in every-day practices.

At the same time, the University tried to involve teachers through continuous and short discussion and reflection panels, seminars and workshops."

4. ICT and learning enhancement

Table 5. Number of data retrieved from the ICT and learning enhancement dimension.

	KTH	UA	KTU	Hasselt
a. LMS_Use	0	0	0	0
a.1. Academic Information Students	0	0	0	0
a.1.1. No	0	0	0	0
a.1.2. Yes	1	1	1	1
Course learning description	0	1	1	1
Without description	1	0	0	0
a.2. Content Repository	1	1	1	2
a.3. Assignments Students	1	1	1	1
a.4. Evaluation Testing	1	1	1	0
a.5. Collaborative Approach	1	1	1	1
a.6. Strategies For Autonomous Self Learning	1	1	1	2
a.7. Supervision Process	1	1	1	0
b. Promoting Use	0	0	0	0
b.1. Development E-learning Strategies	0	0	0	0
b.1.1. Resources	0	0	0	0
Institutional LMS	1	1	1	1
Others	1	1	0	0
b.1.2. Type Initiative	0	0	0	0
Individual	1	1	0	1
Institutional	1	1	2	1
b.2. ICT Support For Teachers	0	0	0	0
b.2.2. Using The System	1	1	1	1
b.2.1. Development E-learning Strategies	1	1	1	1
c. Evaluation Impact	1	1	1	1

The third dimension that we will analyse "ICT & Learning Enhancement", emerged as a relevant factor for this work given the importance of ICT to enhance learning.

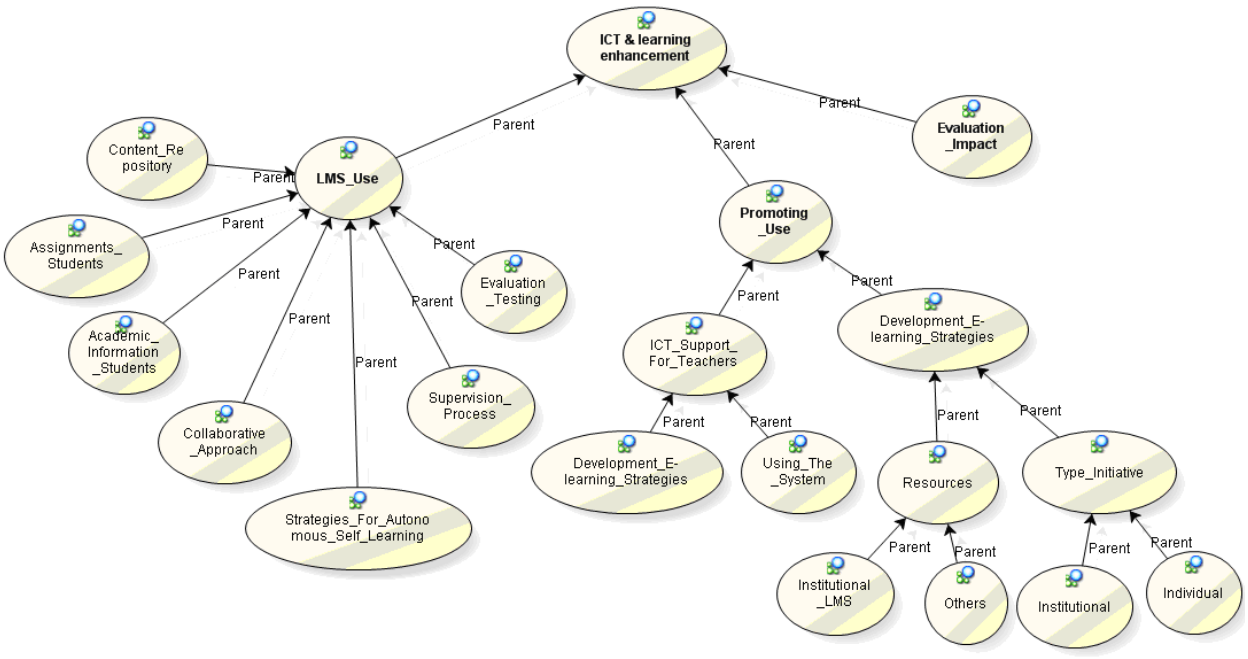

Figure 3. Tree for the ICT and learning enhancement dimension

This dimension presents three major categories, namely: (i) LMS (Learning Management System) use, (ii) promoting use and (iii) impact evaluation.

For "LMS use", we understand the available features in the process of supporting learning.

The category "promoting use" refers to the existence of strategies to promote the use of the LMS through the development of educational strategies, the support given to teachers, and the type of initiatives concerning the promotion of its use.

The category "evaluation impact" is focused on the description of strategies to evaluate the impact of the use of ICT to enhance students' learning, promoted by the Universities under study.

4.1. LMS use and functions

Learning Management Systems are massively used by Universities worldwide to support academic and educational activities. Even though the use of such web based application is a common reality in HE there are different kind of approaches in each University and even in the same University it is usual to exist more than one LMS solution to support academics and student needs.

a1. Academic Information System

All of the partners refer the use of an institutionalized LMS.

The **UA** and **KTH** mention its use to deliver academic information about the courses for the students, for instance. However, they do not explain nor describe the process of giving such information.

However, **KTU** refers that:

> *"LMS enables teachers to inform students about the courses and learning process. This function of LMS is really used by teachers in KTU as some courses are provided using these systems. However, usually two or three times students have to come to face to face meetings even if studies are organized using LMS by distance learning model. Therefore, during the first face to face meeting students are informed about the course and learning process as well as about LMS too."*

UH and especially the Faculty of Business Economic Sciences integrate the LMS in their info delivery activity to students:

> *"For each study program the central administration is gathering the info about the learning process activities and planning for the courses and takes care for the input in the LMS."*

a2. As a repository

The use of LMS as a repository of course content and learning materials is a common use for all the project partners. In **KTH**, **UA**, **KTU and in UH** the use of LMS to submit assignments to student is usual.

However, in **KTU** this functionality is used more in support for distance learning courses than in f2f or hybrid courses:

> *"This function is one of the main functions of LMS, therefore it is essentially used for every provided course. However, not all of these courses are developed for distance learning. This means, that teachers sometimes really use LMS not only to organize study process, but also to make course content available on the internet."*

a3. Assignments for students

This function is used specially by **KTH** and **KTU**, even though the **UA** also points out the use of this LMS function.

KTU adds that the assignments' assessment is kept in the system enabling students to see their grades and to give feedback to their teacher concerning the work done. At the same time, the application encourages an effective feedback process between the teacher and the student also related the grade:

> *"This function of LMS is useful not only for that fact that students are able to submit assignments, but also for that fact that results of assessment are kept in the system. Students are able to see their marks and feedback of teachers. Teachers are able to see when students submitted assignments and deliver the feedback for students."*

a4. Evaluation testing

KTH, **UA** and **KTU** refer the existence of an evaluation and testing function.

However, it is only **KTU** who stresses the importance of an online evaluation. This function helps to reduce teachers' workload, since the LMS evaluates tests automatically:

> *"(…) most useful function of LMS is testing, if teachers use more tests in their normal courses. Blackboard learning system, as well as Moodle, has various types of questions and teachers are able to prepare various tests. This function is really used and this function helps to reduce workload for teachers as LMS evaluates tests automatically."*

a5. Collaborative approaches

KTH, **UA** and **KTU** use the LMS to develop certain collaborative approaches, even though **KTU** refers to the lack of students' participation in discussions. This partner mentions that students usually use discussion features just to answer to specific doubts or when something has to be answered after a question addressed by the teacher:

> *"(…) usually teachers have to start discussions as students are quite inactive. The only moment when students start discussions themselves is when students don't know something. They write the question in discussions, but usually, when they get the answer, they leave discussions (…)"*

a6. Strategy for autonomous self learning

Regarding the use of LMS to support and develop strategies for autonomous learning, the **Hasselt University** refers to this strategy as the most used feature. The learning activity and environment can be organized by each student or in groups. The teacher structures the course content as course modules covering a certain number of topics and delivers it as electronic content modules. These e-learning modules are presented in an attractive way and are composed of text, graphics, sound, images or video fragments. Moreover, LMS may be used to allow students to participate in self testing activities.

> *"The self paced learning process can be organised by the learner individually or he or she can join a team of colleague-learners.*
>
> *The biggest part of the learning process consists of a mix of different learning activities organised by the teacher.*
>
> *The teacher organizes a limited number of lectures to give the students a good overview of the course topics and to explain some complex issues more in detail. The total number of the contact hours is limited to less than 30% of the students learning time.*
>
> *The professor structures the basic course content as course modules covering a number of topics and delivers it as electronic content modules.*
>
> *Part of the content has to be studied as self study. In some courses the learner has to read and study the textbook. In some other cases the self-instruction is organised as an e-learning activity. In the majority of these cases, this type of self-instruction is limited to the basic theory of the learning topics.*
>
> *In the LMS students can find for each course the learning process description and planning in detail, including advises on the learning activities themselves.*
>
> *Communication, information sharing between the team members and with the teacher are integrated in the LMS course. Assignments are delivered in the LMS.*
>
> *Moreover, LMS may be used to allow students to participate in self testing activities."*

KTU stressed that the self learning activity is one of the main purpose of using LMS, because students are able, according to the instructions given by the teachers, to learn from the learning material, to perform and to assess themselves. The KTU also stresses the possibility of monitoring the process of self learning by opening some specific modules in Moodle only after students finish their learning activities.

"According to instructions given by teacher, students are able to learn from learning material, to perform tasks and tests themselves. Teachers from KTU usually make such instructions, put learning material and prepare learning activities for self-learning."

Using Moodle it is possible to monitor the answers given by the students when filling online testing and giving them feedback allowing them, afterwards, to choose different answers. Due to the fact that these features are not easy to implement, teachers usually perform more basic approaches on the self learning process.

Finally, in the **UA** and **KTH** there is also the use of self learning approaches.

a7. Supervision process

The **UA**, **KTH** and **KTU** use LMS for supporting the supervision process.

More particularly, in the **UA** a specific teacher is using the LMS as a facilitator to research supervision.

"For instance, concerning the last point, a teacher from the Department of Education (Maria João Loureiro - mjoao@ua.pt) is using the LMS as a facilitator to research supervision. Although there are regular f2f meetings, the supervision is mainly developed online…"

Although there are regular f2f meetings, the supervision is mainly developed online, using LMS with the following objectives: (i) to develop partnerships between research students and the supervisor, (ii) to create a sense of community, (iii) to share, discuss and test ideas, (iv) to organise ideas and themes, (v) to promote a free dialogue, as well as writing and argumentative skills, and (vi) to develop social skills in a distant learning environment.

4.2. Promoting use

b1. Development e-learning strategies: resources and type of initiative

The majority of the partners use the "Blackboard" as their institutionalized central LMS. Nevertheless, all of them have different alternative LMS.

In **KTH** a minority of the teachers use "PING PONG", a LMS developed in Sweden, which is mainly used in Swedish Universities. Also, there is a Resource Centre for Netbased Education (RCN) belonging to the newly created School for Information and Communication Technology and it has recently developed the KTH Virtual Campus.

In the **UA** the LMS used is Moodle that supports different models and strategies. The use of the Moodle platform is an institutional initiative, available to all teachers and members of staff of the UA. At this institution, individual teachers can use different ICT tools apart from the Moodle. In fact, several researchers point out that these external resources are becoming increasingly used (Social bookmarking, instant messaging, A/V platforms, Micro blogging, Social Networks, Virtual Worlds), because Moodle is observed as a more rigid resource, even though it is available by the University and it is still extremely used (more than 16.000 active accounts exists).

"Also, individual teachers can use different ICT tools apart from the LMS. In fact, several researchers point out that these external resources are becoming increasingly used, because the Blackboard platform is observed as a more rigid resource, even though it is available by the University and it is still extremely used."

Those previous perceptions have been taken into account by a group of researchers from the Department of Communication and the Arts who, along with SAPO (a Portuguese ICT research company), are trying to build a new and much more flexible and open LMS environment, which will bring closer all the members of Academia and the external stakeholders. They understood that a more flexible, open and rich LMS environment was a need asked from teachers, researchers, students, because the use of external resources has been increasing, even though the existence of the "Blackboard" platform.

AT the **KTU** there are two LMS being used "Blackboard Learning System" (official LMS of Lithuanian Distance Education Network - LIEDM) and "Moodle", a set of open sourced course application system supported available just for KTU academic staff. At KTU different teaching and learning approaches have been implemented, which have corresponded to different educational models. From the experience of this partner, ICT enhanced learning requires an initial bigger effort from the teachers, but after the first impact the workload decreases (for instance LMS enables automatic evaluation of students using tests) and teachers see the advantage of using LMS and ICT.

The KTU promotes, implements and participates in several different programmes and projects such as the Lithuanian Academic and Research Network (LITNET), the EU Phare, Leonardo Da Vinci, Socrates, Tempus, FP6 or the Lithuanian Virtual University. The institution established the board of e-Studies which prepared the vision and developed the strategy of e-University.

Finally, the **Hasselt University** also uses "Blackboard" as their institutionalized LMS. On faculty level, for all courses the information of the learning process is available for the students registered in the course. Most of the learning activities are organised in the LMS, even though all other additional initiatives, f.e. interactive online meeting system, are free and depend on the creativity and the belief of the trainers.

b2. Development e-learning strategies

The **UA** along with the UNAVE (Association for Professional Training and Research of the UA) runs continuous professional development (CPD) courses since 2006. One was "ICT in Higher Education" directed to members of staff who wanted to renew and improve their ICT skills, where the use of the LMS was explored although it was not a priority. In fact, the main objectives of the ICT module were to familiarize academics with the current status of the power of Internet based ICT in education and to provide a comprehensive view of the status of standardization.

KTH also deliverers courses on ICT to members of staff. However, the staff commitment to these courses is not perfect, they stress.

In **KTU**, teachers usually come to E-learning Technology Centre with the objective of improving the use of specific learning tools. Usually, using flash building solutions, a great number of different animations and educational games are developed by the Centre. Teachers also ask to make educational video presentations and lectures that have an attractive effect on e-learning students. The KTU E-learning Technology Centre has the objective of promoting and developing higher and continuing education systems with the support of e-learning technologies. Thus, the Centre main goals are: (i) to develop teachers/tutors' and students' support system by implementing e-learning methods and tools, as well as by developing and delivering e-learning modules, (ii) to support and improve e-learning technologies in the academic process, (iii) to participate in research and development of e-learning technologies, (iv) to develop and disseminate learning methods and technologies supported by ICT, (v) to analyse new technological

solutions and to provide recommendations for implementation of these solutions in the study process. Also, this partner highlights:

> *"There were developed special systems in the Centre: CDK (Course Development Kit) – system for development of e-learning content; ViPS (Video Lecturing System) – system for provision of video lectures on the internet; Limesurvey – system for development of online surveys. During the implementation of this national programme and sub-programmes, teachers from all Lithuanian educational institutions are trained on how to use various systems and technologies in order to improve and enrich higher education."*

In **UHasselt**, the ICTO cell of the central ICT department is supporting the professors when taking an initiative to build in ICT enhanced learning aspects or when planning an e-learning project for its courses

— **Using the system**

The **KTH**, **UA** ,**KTU** and **UHasselt** give support to staff for improving the use of e-learning tools.

In the **UA** all the academic members received training to use the LMS platform. Nowadays, this support is given causally or by appointment. However, the UA along with the UNAVE have run CPD (Continuous Professional Development) courses since 2006:

> *"One was "ICT in Higher Education" directed to members of staff who wanted to renew and improve their ICT skills, where the use of Moodle may be explored, but it is not a priority. In fact, the main objectives of the ICT module were to familiarise academics with the current status of the power of Internet based ICT in education and to provide a comprehensive view of the status of standardisation."*

The **KTU** has a special department E-learning Technology Centre for organizing teacher's support system. One of its objectives is to give support for teachers using the LMS as well as other ICT. The main goal of education brought in KTU E-Learning Technology Centre is to let pedagogues of KTU and other educational institutions raise their qualification by expanding competency in distance learning field: to gain practice in capacity of using modern informational technologies (IT), creating and providing courses and modules based on contemporary IT solutions all around of Lithuanian and Europe's continuous studies market. This support is given also by appointment if needed. The KTU E-Learning Technology Centre also provides advises in distance education courses' preparation, presentation and management.

In **UHasselt**, staff members are supported by the ICTO team. Also online courses and online help are available in the LMS itself in using the LMS

> *"The ICTO team organises on a regular base courses for staff in using the LMS. Especially when new versions of the system were installed, staff members were informed and will be supported to make changes if needed and to continue using the system.*
>
> *In the LMS the users can find announcements about new and changed facilities.*
>
> *Online courses and online help about using the LMS are built in, and permanent phone help is available."*

b3. Evaluation Impact

The **KTH**, **UA**, **KTU** and **UHasselt** refer to some research being held in their Universities concerning the impact of the use of ICT in teaching and learning.

In the **UA** there are some research projects being developed at the Department of Education. One is a project of a PhD student who is developing a study to evaluate the use of ICT by academics at the UA. Also, there is a researcher who is evaluating teaching and learning quality in b-learning and distant learning approaches in Portuguese Universities.

At the **KTU** there are some internal studies, although the most important was performed by the National Association of Distance Education (NADE):

> *"Distance education in Lithuania - The National Study. The KTU took part in the process of development of this study that aim to contribute to discuss themes such as (i) readiness to apply new information technologies in education and training, (ii) the current position of distance education in Lithuania, (iii) the position of the Lithuanian education system to apply distance education, and (iv) the experience of foreign countries in distance education."*

In **Uhasselt** several experiences in building best practices, development of guidelines, organisation of meetings to discuss about experiences were initiated on central management and on faculty members' level.

> *"The ICTO team developed several example courses in e-learning and a guide to develop e-learning courses. Several experiments in ICT enhanced learning were done in courses business informatics nad evaluation was done by the students. Recently the project blended learning in UHasselt has been starting and discussion sessions with participants from all faculties were organised."*

5. Training of HE teachers

Table 6. Number of data retrieved from the Training of HE teachers dimension.

	KTH	UA	KTU	Hasselt
a.National Context and Policy	1	2	1	1
b.Institutional Context and Policy	6	3	3	2
c.Courses	0	0	0	0
c.1.Courses description	3	4	3	0
c.2.History Course	1	1	1	0
c.3.Duration	2	1	1	0
c.4.Pedagogical Methods Resources	0	5	1	0
c.5.Participants Assessment	0	0	0	0
No	0	0	0	0
Yes	1	1	1	0
Description Assessment	1	1	1	0
c.6.Implications	1	0	1	0

c.7.Number Participants	1	1	1	0
d.Courses' Evaluation	1	4	1	0
e.Future Courses	2	0	1	0

The fourth dimension is called "Training HE Teachers" and it refers to the existence and description of initial and/or CPD training initiatives (courses/modules/ workshops) directed for HE teachers. This dimension has the following categories: (i) national policy context, (ii) institutional context policy, (iii) courses, (iv) courses' evaluation, and (v) future courses.

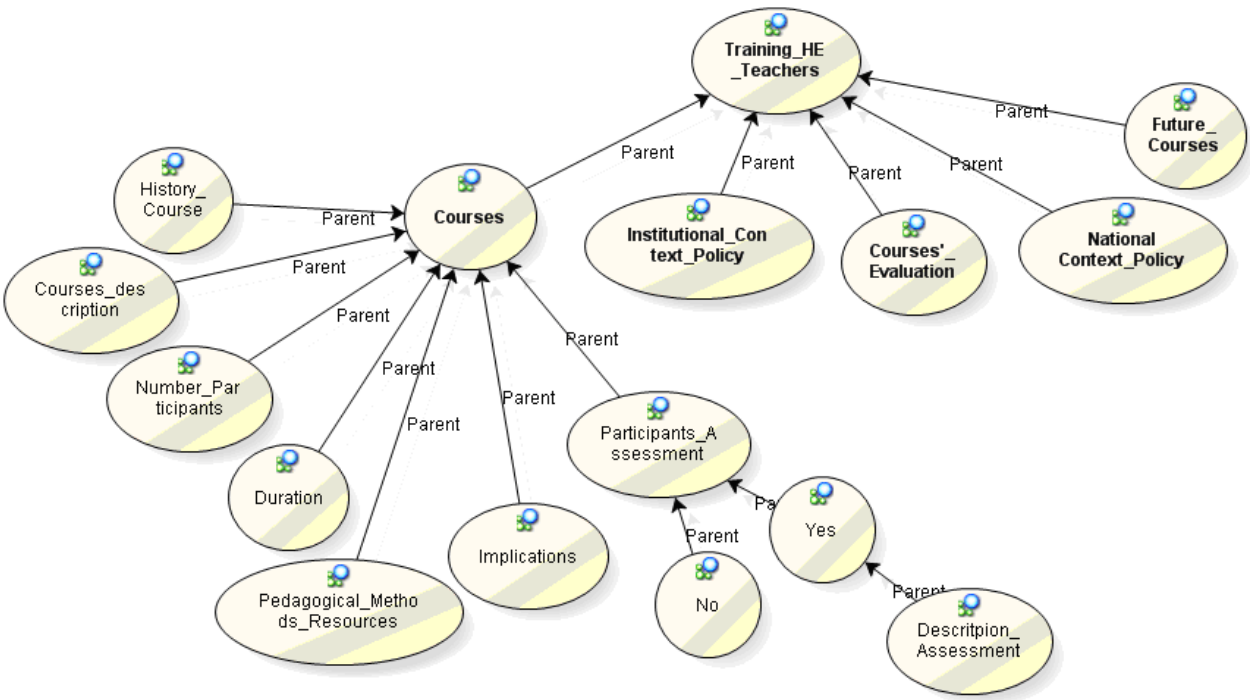

Figure 4. Tree for the Training of HE teachers dimension

The "national context policy" category refers to the description of the national context and policy that stimulates the existence and promotion of initial and/or CPD training initiatives (courses/modules/ workshops) for HE teachers in Universities.

The "institutional context policy" refers to the description of the institutional context and policy that stimulates the existence and promotion of initial and/or CPD training initiatives.

The category - "courses" - deals with all the information that characterize the CPD training courses.

Another category - "courses evaluation" refers to the evaluation processes carried out to evaluate and monitor the quality and impact of the courses.

The last category that emerged from the analysis was the "future courses". This is characterized by the guidelines/plans related to the development and implementation of future courses/ programs/modules/workshops.

5.1. National context and policy

Lithuania - KTU

The Lithuania government has been putting a lot of effort in the training of teachers, other professionals, and citizens in general in the use of ICT:

> *"Lithuania actively participates in development of ICT for higher education and training of higher education system. Until 2006 there was a programme "Information Technologies for Science and Higher Education (ITMiS)" implemented. Now there is another programme "Lithuanian Virtual University" that continues the ITMiS programme. The main aim of the LVU programme is to expand information infrastructure of Lithuanian science and studies, applying available resources, that attempts: to develop effective and coherent, available and continuous educational system and provide conditions to study all lifelong; to ensure the quality of educational system while integrating into the common European educational space; to prepare specialists of the highest quality; to carry out research; to ensure possibility for Lithuanian citizens to obtain knowledge, skills and qualifications that would allow to adapt to quickly changing conditions of life and work; to expand the programmes for involving the disabled or people with special needs into information society applying the possibilities of information technologies (…)"*

Also, HE teachers need to pursue lifelong learning skills to raise their qualifications. The training courses/modules/seminars for HE teachers are then widely looked for, since it will give the necessary credits to raise their qualifications:

> *"Accordingly to the regulations of qualification rise of university employees all university teachers and scientists must raise their qualification at least once per five years. To do this in e-learning or ICT in education areas is possible to attend various external and internal courses (…)"*

Portugal - UA

According to National Legislation in Portugal HE teaching staff does not need any professional qualification to become a permanent teacher (the same is not true for all the other educational levels). Thus, there are no national policies to promote the training of HE teachers.

> *"There are no specific courses or other accreditation processes for the new teachers to follow. However, the Ministry of Education for Higher Education (HE) should build on the progress made in upgrading the qualifications of staff in the universities and polytechnics by now directing attention to the specific qualities and contributions of those (and other) staff (…)"*

The success of training initiatives is limited by the institutions' political systems, academia tradition and financial situation. Portuguese academia is still reluctant to enrol these courses. Teaching was until recently regarded, in many traditional institutions, as unquestionable. Research quality is yet the common method for academic promotion. This reality leads, in many cases, to academics' lack of motivation in enrolling activities related to teaching. Nevertheless, this reality is slowly changing:

> *"The Ministry and tertiary education institutions have undertaken an initiative to address quality issues (more recently with Law 1/2003 and Law 484/2006). These laws set an important course for external evaluation and for the accreditation of courses. The*

evaluation system, following the Dutch model, is directed at ensuring the quality of "pedagogic and scientific performance."

"The accreditation and quality assurance in HE implies more qualified academics. According to the Portuguese university teachers education law, university teachers have to accomplish three main objectives, namely: i) to deliver classes that are established by the department; ii) to develop, individually or in group, scientific research, and iii) to contribute to the democratic organization of the university. The first objective should imply scientific and pedagogical preparation. Indeed, university teachers are expected to be scientifically accurate and pedagogically efficient."

Belgium – Hasselt University

The Flemish Government stimulated ICT enhanced teaching and the implementation of advanced educational models via launching calls for institutional projects.

Sweden - KTH

There is a strong focus on the pedagogical training of HE teachers in Sweden. Universities run teaching and learning centres to support teachers at this level of education:

"According to the Government Higher Education Ordinance research, pedagogical, and other working experiences shall be evaluated and qualify for being employed as a university teacher."

"From around 1970 the University Chancellor's Agency later changed to the Swedish National Agency for Higher Education organized university teacher training during intensive programmes. (I myself participated in many during the 70's 80's and learnt a lot.) Later these courses were organized in parallel by the Council for Renewal of Higher Education and the universities Centra for Educational Development in parallel. Since some years back it is the universities themselves with pressure from The Association of Swedish Higher Education (in reality run by the rectors of Swedish universities, http://www.suhf.se/web/In_English.aspx) which pushes for organization of Learning Labs, University Pedagogical Centre etc. (some has both) and recommends at least 15 ECTS points i.e. at least 10 week pedagogical training for new employed university teachers."

5.2. Institutional context and policy

Lithuania - KTU

The special E-learning Technology Centre located at Kaunas University of Technology is responsible for support of University teachers:

"The main goal of education brought in KTU E-Learning Technology Centre is to allow pedagogues of KTU and other educational institutions raise theirs qualification by expanding competency in distance learning field: to gain practice in capacity of usage modern informational technologies, creating and providing courses and modules based on contemporary IT solutions all around of Lithuanian and Europe's continuous studies market. Teachers are able to take part in various qualification courses that are provided in this centre. Of course there are various other training courses to raise qualification;

however mentioned courses are major in the e-learning field as e-learning is mostly ICT related learning."

Portugal - UA

The UNAVE (Associação para a Formação Profissional e Investigação da Universidade de Aveiro, Association for Professional and Research Training at the University of Aveiro) provides non-compulsory professional training for HE teachers. The University itself does not run continuous training courses for members of staff, just seminars and workshops to engage teachers in pedagogical issues. Most of these seminars and workshops take place once or twice a year.

Belgium – Hasselt University

Each academic year a course on educational professionalism for HE teachers is offered and advised to young or new members of staff.

On regular base, courses in general professionalism are also provided for all staff members on voluntary base:

"On regular base courses in general professionalism of staff members are organised. These courses include advanced course in English, communication skills, writing research project proposals, writing research publications. All staff members are welcome at voluntary base."

Sweden - KTH

KTH's teachers must have University level teaching qualifications:

"Via visible, public pedagogical development projects and different incentives for excellence in teaching, KTH will work to improve the status of pedagogical activities. Involvement in pedagogical development projects, seminars on pedagogical issues and international exchange of lecturers are to be supported and encouraged."

"Most universities then give many pedagogical faculty staff development courses and seminar series. At larger universities the staff at the Learning Labs, Pedagogical Centre etc. are from 10-20 persons + some located at home departments. Smaller university colleges has, of course, fewer staff"

5.3. Courses

The following table will present the CPD courses, their description, and history and how it works.

Table 7. CPD courses

	KTH	KTU	UA
Courses description	There are also courses as Teaching and Learning in an International University 4,5 ECTS (120 hours workload), Research Supervision 3 ECTS	Major courses in distance learning as well as in e-learning field are: "Distance learning methodology", "Video conferencing methodology",	The first module (PeDCES) of the staff development program covers the basic concepts and strategies related to pedagogy and curriculum design in HE.

	KTH	KTU	UA
	(80 hours workload) and seminars of different kind (as e.g. Plagiarism).	"E-material preparation methodology", "Work experience in virtual learning environments (Blackboard learning system, Moodle)", "Experience in preparation material using CDK tool" and "European Computer Driving Licence ECDL". Teachers from KTU are also able to study in courses that were developed during the project "Integral Development of Lithuanian Distance Learning System Activity": "E-Learning courses planning and development", "E-learning courses delivery and administration", "General e-learning principles and quality assurance", "E-learning organizing and management" and "Technologies in e-learning courses development and delivery".	The second module (TICES) provides an in-depth view of the power of Internet based ICT in education, and addresses the most relevant issues concerning the current status of standardization and available products for the creation and management of learning solutions using Internet based ICT. Finally, the third module (DACES) addresses the practical issues related to building and managing distributed learning communities.
History of the course	Since some years back it is the Universities themselves with pressure from The Association of Swedish Higher Education (in reality run by the rectors of Swedish Universities, http://www.suhf.se/web/In_English.aspx) which	The KTU E-learning Technology Centre started its activity since 1996. During the various international projects it was started research in distance learning field as well as in ICT in distance learning and higher education field. During the PHARE project the	Taking advantage of the reorganization of HE in Europe towards the creation of a common HE space, as defined by the Bologna declaration, the UA has decided to organize a CPD courses running in 2005 and 2006.

	KTH	KTU	UA
	pushes for organization of Learning Labs, University Pedagogical Centre, recommends at least 15 ECTS points i.e. at least 10 week pedagogical training for new employed University teachers.	course "Distance learning methodology" was prepared and suggested for teachers from KTU as well as from other Universities.	
Duration	First initial course 5 weeks effective studies. But it spread during about one semester. The total of 15 ECTS (10 weeks) usually takes 1 ½ years to complete.	The studies time is different and depends on the courses. If courses are provided in f2f sessions, the time may vary from 2 to 5 weeks. However, if courses are distance learning courses and are provided in learning management system, the time of studies may vary from 4 to 8 or even more, e.g. 16 weeks. Studies in f2f courses may take from 8 to 20 hours in classes and from 8 to 20 hours at home for self-works. Distance learning studies may take from 40 to 160 hours for learning in learning management system and for self-studies as well as for home-works or self-works.	Each module of the staff development program runs for 2 months with 50-hour workload and is organised on a blended-learning approach, thus comprising face-to-face (f2f-21h) and Internet supported distance activities (29h). In each module there are three 1-day f2f moments.
Pedagogical methods and resources	N/A	Traditional learning courses are taught in computer classes during the f2f sessions. Teachers usually use PowerPoint slides and lectures. Learners perform all tasks given by teachers in the classrooms.	The activities developed throughout the module comprise f2f or on-line debates about a specific issue of the programme. These debates will lead to a set of written reports that will culminate in a final portfolio.

	KTH	KTU	UA
		In distance learning courses teachers use LMS and e-learning material. During the studies of both types, learning activities of home works' or self works' type are used too.	Learners are encouraged to read a few reference texts. During the first f2f session, a general presentation of the main topics is provided. However, most of the time is reserved for practical exercises. The tasks are planned to engage actively the participants of the module with the broader objective to establish learning partnerships inside the work group. Furthermore, some of these activities will imply the discussion of some topics in the f2f sections as well as in the discussion forums at the ICT teaching-learning tool: Blackboard.
Participants' assessment	Pass and non pass. Failing is very unusual.	Usually participants have to make final works or take the tests. Teachers assess them during the final lessons or at the end of the studies. If learner performs all tasks that he gets from the teacher, he awards the diploma. The diploma confirms that learner took part in appropriate studies and finished an appropriate course. As it was mentioned earlier all University	Each module ends with the third f2f session comprising final presentations and discussions. The edition of an online portfolio of the reports highlights the work carried out throughout the module. This final activity is strongly recommended since it will stimulate the reuse and dissemination of the knowledge acquired by the participants.

	KTH	KTU	UA
		teachers have to raise their qualification at least once per five years. Diplomas confirm that they have raised their qualification.	
Implications	No implications	Usually all learners complete the course successfully. Teachers have to raise their qualification every 5 years.	N/A
Number of participants	This partner does not know. But probably around 50 % takes the initial course. Fewer take other courses.	There are no the exact information concerning this aspect. Sometimes not only teachers take part in these courses. However, most of them are teachers and maybe about 60 or even 70 % of learners are eligible staff.	2005-2006: PeDCES,32; TICES, 64; DACES, 26; 2007-2008: PeDCES, 60; TICES, 65; DACES, 66; 2008-2009: PeDCES, 25; DACES, 22.

5.4. Courses' evaluation

All the partners mention the evaluation of the course, even though the data is very generic. Nevertheless, it shows that the evaluation of this initiative suits itself of importance.

The **KTH** refers that:

> *"Those who take the courses are very satisfied. (…) Courses are evaluated via the LMS and in direct contact with the participants and, if necessary, revised."*

Concerning the **KTU** experience it is mentioned that:

> *"Usually teachers of distance learning courses use electronic questionnaires at the end of the course in case to learn more about the satisfaction of learners and recommendations how the course could be improved. Teachers of face to face courses also used paper questionnaires, but normally now they evaluate studies according to the final works or exams of students. Some teachers organize discussions with learners about studies at the end of studies either."*

Finally, the **UA** stated that the 5th edition of the DACES module was reformulated based on the participants' comments and suggestions of the previous editions. Thus, the suggestions pointed towards the design of teaching and learning strategies to promote collaborative learning using e-learning platforms and assessment instruments to assess collaborative interactions between students. Following these suggestions, the module was redesigned aiming instead specifically

to create a community of practice between members of staff to discuss the above issues. The concept of 'learning by doing' was considered when designing the methodology of the CLHE (Collaborative Learning in Higher Education) Module.

Also this partner has presented the cases of the evaluation of 2 modules, which we report here:

"The case of the Collaborative Module in Higher Education (CLHE)-5th edition (2008/2009)

Two questionnaires were delivered to the 20 participants of the CLHE Module aiming to analyse (i) the initial expectations and prior knowledge of the participants, (ii) the final expectations, and (iii) the Module impact on their teaching practice.

The initial questionnaire was delivered in the first f2f session, while the follow-up questionnaire was delivered after 2 months of the end of the module. The initial questionnaire was constituted by two parts. The first one had the purpose to evaluate the participants' knowledge and knowhow of topics that could be more or less developed in the module and it consisted of 9 items. This information was very relevant since allowed us to redesign the activities and some of the learning outcomes. The second part had the objective to evaluate the initial expectations and was constituted by 11 items.

The final questionnaire had the same two parts since the objective was to monitor the acquisition of knowledge at the end of the Module in the 9 items and the final expectations. In addition, the final questionnaire had three more parts, aiming to evaluate (i) the impact of the Module in their professional life, (ii) the design and use of learning Communities with their students or colleagues, and (iii) the positive and more negative aspects related to the organization of the Module."

"The case of the University Pedagogy and Curriculum Design

A questionnaire was designed aiming to analyze the impact that the module, more specifically the use of curriculum maps of alignment, is having on the change of teachers' teaching practice. This questionnaire was delivered by mail in January 2009 to 150 participants that attended the staff development programmes since the first editions of the modules in 2005.

The questionnaire was organized in three parts. The first part aimed to characterize the participants concerning the number of years of teaching experience in HE, the year of participation in the professional development workshops/programmes and the name of the institution. The second part had the purpose of evaluating the impact of the workshops: (i) in the design of the courses based on Learning Outcomes (LOs), and (ii) in the use of CMA as a tool to maximize the alignment of LOs, teaching and learning strategies, student workload, and assessment. The third part consisted of an open question and had the objective of identifying positive and less positive aspects in the use of CMA."

5.5. Future courses

Finally, regarding this category, **KTH** mentions two more courses to be run and delivered to the teachers

"From this summer also a new course on Digital Competence and Learning – ICT for the 21 Century (8 ECTS) for students but will also suit teachers. Distance based: http://www.kth.se/rcn/utbildning/pedagogik?l=sv_SE. Courses like this must always – as science and

technology courses - be developed. Also stronger national and international cooperation is needed.

Development ideas also comes through SwedNet (http://www.swednetwork.se/om_swednet.php) an association for development of higher education. And also through the Knowledge Foundation (http://www.kks.se/templates/StandardPage.aspx?id=84) project LIKA (http://lika.pbworks.com/LIKA+in+English) lead by Learning Lab, KTH. This is a six year SEK 12 million for changing the old-fashioned (based on 100 years old pedagogical ideas) teacher training to a modern teacher training."

On the other hand, **KTU** is going to continue to provide several courses, mainly to improve teachers' expertise on e-learning and ICT solutions. In fact, this University

"Sees e-learning as one of the underling study forms in the future. The primary tasks for the development of e-Learning at KTU are:

- *To establish the governing body, the Board, for implementation of e-University vision;*
- *To prepare the Programme of University e-learning development;*
- *To disseminate the information about e-learning to students, teachers and other society members;*
- *To raise professional skills of university teachers in e-learning, to prepare e-learning developers, delivery coordinators and tutors;*
- *To create the system for teacher motivation to participate in e-learning development:*
  - *To assign additional funding for teachers developing e-learning courses;*
  - *To consider the development of e-learning course as curriculum preparation;*
  - *While approving traditional study modules, to evaluate the amount of e-learning elements used in that module;*
  - *To legitimate the e-learning study form as an alternative form for university studies.*
- *To introduce the system of e-learning course accreditation:*
  - *To form a group of e-learning experts;*
  - *To approve a DE module (study form) only having an approval of e-learning experts.*
- *To support a technical basis of software and information communication technologies, and to improve the access to information resources on the internet University's virtual environment;*
- *To integrate University's e-studies into the global market of education. To develop an international orientation;*
- *To develop e-learning legal basis."*

6. Bologna Process Implementation

Table 8. Number of data retrieved from the Bologna Process Implementation dimension.

	KTH	UA	KTU	Hasselt
a. National policy	0	1	4	0
b. Acceptance	1	2	1	1
c. Bologna follow-up	1	0	3	0
d. SWOT Bologna	0	0	0	0
d1. Strengths	1	1	1	0
d2. Weaknesses	1	1	1	0
d3. Opportunities	1	1	1	0
d4. Threats	1	0	1	0
e. Implications	0	0	0	0
e1. Curricular design and changes	2	1	0	1
e2. New system	2	0	4	0

The fifth dimension is called “Bologna process implementation”. It refers to the institutional acceptance, promotion, implementation and development of the Bologna Process, particularly regarding the next topics: (i) national policy; (ii) acceptance; (iii) Bologna follow-up; (iv) SWOT and (v) implications.

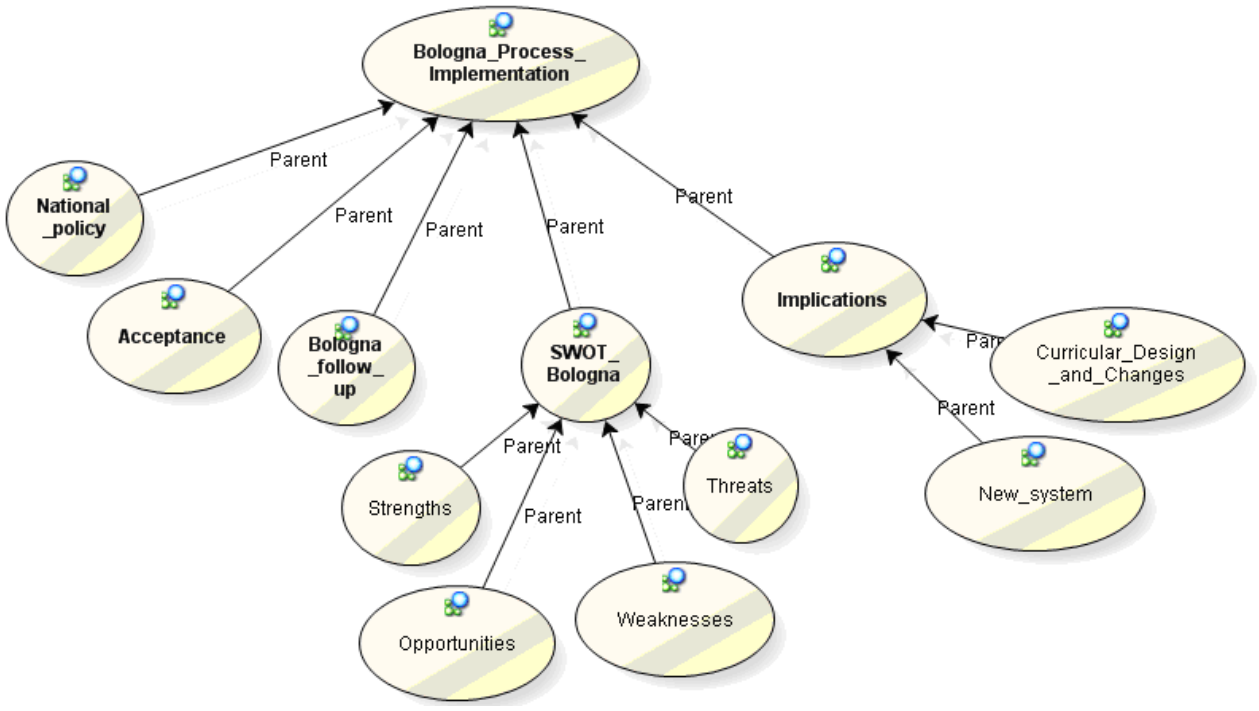

Figure 5. Tree for the Bologna Process Implementation dimension

The category "National policy" refers to the changes made by the central government, concerning the legislation which exists to put Bologna "on track".

In turn, the category "Acceptance" refers to the process of acceptance and preparation, discussions and initiatives about the implementation of the Bologna Process.

The category "Bologna follow-up" mentions the history, more or less generic, of the implementation of the Bologna Process.

The category "SWOT" is related to strengths, weaknesses, opportunities and threats concerning the implementation of the Bologna Process.

Finally, the category "Implications" focuses on the implemented strategies to promote and develop the Bologna Process, in practice.

6.1. National Policy

The Bologna process brought different national policies in **Portugal** and in **Lithuania**. Both these countries formed their national Bologna follow-up group, which was constituted with central ministry members but also with a strong part of faculty members. This group had the responsibility of producing reports about the Universities commitment towards the reforms driven by the Bologna process and also to coordinate the process of disseminating information and results of the implementation.

The **Lithuanian** follow-up group awards a diploma after successful accreditation.

In **Portugal**, the Government has approved, very recently, the creation of the Agency of Evaluation and Accreditation Assurance for Higher Education Quality which represents a move towards the teaching and research accreditation, internationally recognised by the European Association for Quality Assurance in Higher Education (ENQA). This new agency has the next objectives:

> *"i) the support for fighting the students' drop out and failure rates, ii) the stimulus for academic staff to pursue professional qualifications; and iii) the incentive for research activities." The long term objective is: "design of internationalisation strategies and the creation of strategic alliances with foreign HE institutions aiming to the development of the quality of their teaching and research."*

Like in Portugal, in Lithuania there is a Diploma Supplement legally introduced at a national level in 2004. This diploma, since 2006,

> *"is delivered automatically free of charge in the English and Lithuanian languages to all graduates at all higher education institutions and conforms to the EU/CoE/UNESCO Diploma Supplement format".*

This diploma is given to all students first and the second levels.

Under the Bologna reform, still in progress in Portugal, major changes are being introduced in the organisation of HE, concerning both the degree structure and the organisation of teaching, with effects that started in the academic year 2006/07. The most visible change is the 3 years undergraduate degree, instead of 5 years for most of the degrees. But other changes will affect HE institutions.

"Indeed, Bologna has been a political motive to speed the need of a profound reform in the Portuguese HE system."

In **Flanders** (**UHasselt**) the diplomas and diploma supplements granted since 2004-2005 are granted in accordance with the decree of the 4th of April 2003 regarding the Flemish higher education structure.

The Diploma Supplement follows the model developed by the European Commission, Council of Europe and UNESCO/CEPES, providing independent data in order to improve the international transparency and fair academic and professional recognition of qualifications. It describes the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which the supplement is appended.

6.2. Acceptance

In all of the partners, and their countries of origin, the Bologna process and its guidelines where widely accepted.

KTU and Lithuania participate in the European area of HE.

The **UA** and Portugal joined the challenge of the Bologna Process very soon, where it is at stake much more than a homogenization of courses and cycles. For the UA, the core of the Bologna process was the development and improvement of a new teaching and learning paradigm, where the teacher is seen as a facilitator and the student is the active agent who pursues knowledge and the development of his competences.

"The Bologna Process was immediately accepted by the Institutional members of staff. Therefore, rapidly, the University of Aveiro showed concerns to discuss Bologna guidelines and major themes and to implement changes which reflect Bologna ideology."

Consequently, since the beginning there were developed several workshops, seminars and public discussions about Bologna major themes, where international experts came to the UA to share reflections and their own institutional practices. As a consequence, some papers and conclusions were published and are available online at http://paco.ua.pt/documentos/?p=Bolonha.

The **Hasselt University** (Belgium) have evolved the bachelor/ master structure since 1999. During this process the curriculum was completely re-engineered.

In **KTH** (Sweden) the Bologna process was implemented during July 2007 and the cost for the implementation, at this institution, was of 40-45 million SEK (4-5 million EUR). It is estimated that in Sweden (for the largest 30 of the existing 48 Universities) the cost of the Bologna process was: 1 billion SEK (100 million EUR).

6.3. Bologna Follow-up (history from the process)

In **Lithuania**, amendments made to the Law on HE, and subsequent secondary legislation (Order of the Minister of Education and Science on General Requirements for Joint Degrees), in January 2006, created a legal basis to award international joint degrees at HE institutions.

The last amendments to the Law on HE of 2006 enabled colleges (non-university HE institutions) to award a Professional Bachelor degree from 2007. This would only be possible in accredited

colleges. At present, there are 7 (4 public and 3 non-public) of such colleges, and 9 colleges are under the accreditation procedure. For the time being, all colleges award a HE diploma and a professional qualification.

In April 2006, the Government approved the Lithuanian HE System Development Plan for 2006-2010 and measures for the first stage of its implementation for 2006-2007. The main objectives of the Development Plan are to improve the governance and management of HE, to enhance the quality, embed new financing mechanisms and to ensure the effective use of financial and human resources.

In fact, qualifications of HE, awarded by Lithuanian HE institutions are, in general, compatible with the overarching qualifications framework for EHEA (European Higher Education Area). Qualifications awarded at all 3 levels are defined by profile, level structure and credit ranges. On the other hand, all Lithuanian HE qualifications are classified by study field, level and profile in the General Classifier of Study Areas and Fields approved by the Government in 2001.

The operating national quality assurance system, which started in 1995, basically is in line with the Standards and Guidelines for Quality Assurance in the EHEA today, as it embraces all core elements required for both external and internal quality assurance process. The implementation of common European quality assurance standards is one of the objectives defined in a new policy document for the coming period: the Lithuanian HE System Development Plan for 2006-2010.

In **Sweden**, University committees were set up in 2003 to develop the courses and the syllabi for some study programmes. This was tested from 2005. During 2006, courses were given to all University teachers at **KTH** and each responsible teacher had to rewrite the course plans according to grades A-F (and Fx) and learning outcomes.

6.4. SWOT Bologna

It was asked to partners to fill up a SWOT analysis about the effectiveness and capability of each country and respective HE area to implement the Bologna guidelines.

Table 9. SWOT analysis.

	KTH	KTU	UA
Strengths		University is well known in national and international levels Academic have big competences Research addressed to the strategically objectives and National priorities A very good ICT infrastructure in University Well regulated amount for studies	History of educational innovation with early commitment to ECTS and the Bologna process

	KTH	KTU	UA
		The biggest budget (not governmental) among Lithuanian institutions Possibility of adaptation to the dynamic society	
Opportunities		To delivery qualitative studies and to develop competences for T&T To organize studies to foreign students To integrate new IT systems to organize studies process To develop facilities for continuing education To transfer results of research to the IT development and innovations To participate in formation of social-economic policy in Lithuania	European processes such as Bologna, the creation of the European Research Council (ERC) and regional development funds can be fully exploited to increase internationalisation and research funding streams. Some of the UA research teams can certainly aspire to ERC funding and the University is actively implementing the Bologna reform, with the expectation of being well ahead of the national deadline. A recent study of the implementation of Bologna degrees in Portugal revealed that “programs that changed their curricula to conform with the Bologna principles were subject to an increase in demand by prospective students. That positive impact on demand was more pronounced if the institution took the lead, being the only institution in the country that restructured the

	KTH	KTU	UA
			program" (Cardoso et al. 2006:21). This bodes well for UA at least in the short term.
Threats		Migration of specialist with high competences A big level of personal social differentiation and different competences in IT Decrease number of students according to possibility to study in foreign countries Low level of concurrence for Scientific Research Decrease of the needs for scientific research. One of the reasons – import of new cheep technologies or products	N/A
Weakness	Long penetration time (decades) Weak financing	A high average of academic staff age Uneven general IT using There is not enough studies and scientific research basis No concourses to take teachers functions Less facilities delivered by internet Uneven observation processes and quality assurance systems Less students motivation to study in University	Excessive dependency on state current funding Insufficient fundraising Unbalanced deployment of staff and difficulty in redeployment Lack of capacity to impute total costs to funding agencies

6.5. Implications

e1. Curricular design and changes

A predictable consequence in **Sweden**, in **Belgium** and in **Portugal** was the change of the curricular design of the courses offered.

In Portugal it changed for 3 years undergraduate degree instead of 5 years for most of the degrees. This implied meetings, discussion, critical reflection and research about other study programmes abroad. Also, following this phase, teachers' became aware of the process of teaching, learning and assessment needed to change.

> *"(…) there was the necessity of giving to members of staff training about "new" teaching and learning activities which followed the Bologna guidelines."*

In the **UA**, there is also an internal task force with researchers and teachers with the objective of monitoring the development and implementation of the Bologna process:

> *"Additionally, it is important to emphasise the existence of an internal task force, formed by researchers and teachers of the University, whose great objective is to monitor the implementation and development of the Bologna guidelines in different aspects. Also, they continue discussions concerning various aspects to always improve and enhance the quality of changes made at the University, which were stimulated by the Bologna Process."*

In the **University of Hasselt (Belgium)**, the curriculum was completely re-engineered.

In **KTH**, training was delivered to all University teachers and each course responsible had to rewrite the course plans according to grades A-F (and Fx) and learning outcomes.

e2. New system

Lithuania operates its own national credit system. The Law on HE states that the average amount of one academic year in full-time studies corresponds to 40 credits. The national credit system is applied to the Bachelor and the Master levels and non-university sector study programmes. Doctoral programmes have to allocate credits as well, according to the Decree of the Government on Doctoral Studies of June 2002 (see National Report to the Bergen Conference, point 6.1).

KTU, as all Universities in Lithuania, uses its national credit system based on student workload with an average of 1600 working hours per academic year. One credit corresponds to 40 national hours of student work (in classes, laboratories, independent work etc.), or to one working week.

> *"One KTU credit is equal to 1,5 ECTS credit. One semester equals to 20 KTU credits (30 ECTS credits). One academic year equals to 40 national credits (60 ECTS credits). The volume of undergraduate studies is no less than 140 credits and no more than 180 credits (since 2010 no less than 180 and no more than 240 credits)."*

In **Portugal** and in **Sweden** it is followed the Bologna process but currently they have a parallel system with 5 years integrated Master of Science (Integrated Master in Portugal) and a 3 + 2 system. In **Sweden**, however, it will gradually change to the later system (but with 4 years PhD programmes, i.e. 3+2+4 instead of 3+2+3). Nevertheless, it is used an absolute grading system; not the Bologna relative grading system.

The Flemish (**UHasselt**) credit system is fully based on the European Credit Transfer and Accumulation System (ECTS). A standard program of one academic year equals approximately 60 credits. Each program component counts for at least three credits. One credit represents 25 to 30 hours of a student's workload. It was developed three level degrees:

1. Bachelor

After successfully completing a programme of at least 180 ECTS credits students obtain a Bachelor's degree. Academic Bachelor's programmes are based on scientific research and mainly prepare students for further studies at Master level. These degrees are awarded by universities and some university colleges in the framework of an association.

2. Master

After successfully completing a programme of at least 60 ECTS credits students obtain a Master's degree. Master programmes are characterised by the interaction of education and research and aim to bring the students to an advanced level of knowledge and competences. A Master's dissertation or project finalizes the Master programme.

3. Doctor (Ph D)

The degree of "Doctor" (Ph D) is awarded after the public presentation of a doctoral thesis which confirms the author's capability to create new scientific knowledge based on independent and autonomous scientific research. Only universities may award the degree of "Doctor" (Ph D).

7. Quality Assurance

Table 10. Number of data retrieved from the Quality Assurance dimension.

	KTH	UA	KTU	Hasselt
a. Quality management organization	0	0	0	0
a1. Quality assurance system	0	1	1	1
a2. Leadership	0	0	0	0
External advisory committee	1	1	0	1
Responsible member	1	1	3	1
a3. ISO Certification	1	1	1	1
b. Quality process	0	0	0	0
b1. Quality procedures	1	1	1	0
b2. Evaluation process	1	1	2	1
Forms of evaluation	2	1	0	1

The last dimension is called "Quality Assurance" and it refers to the description of the quality assurance system which exists and is promoted in the University, mainly taking into consideration (i) the quality management organization, and (ii) the quality process.

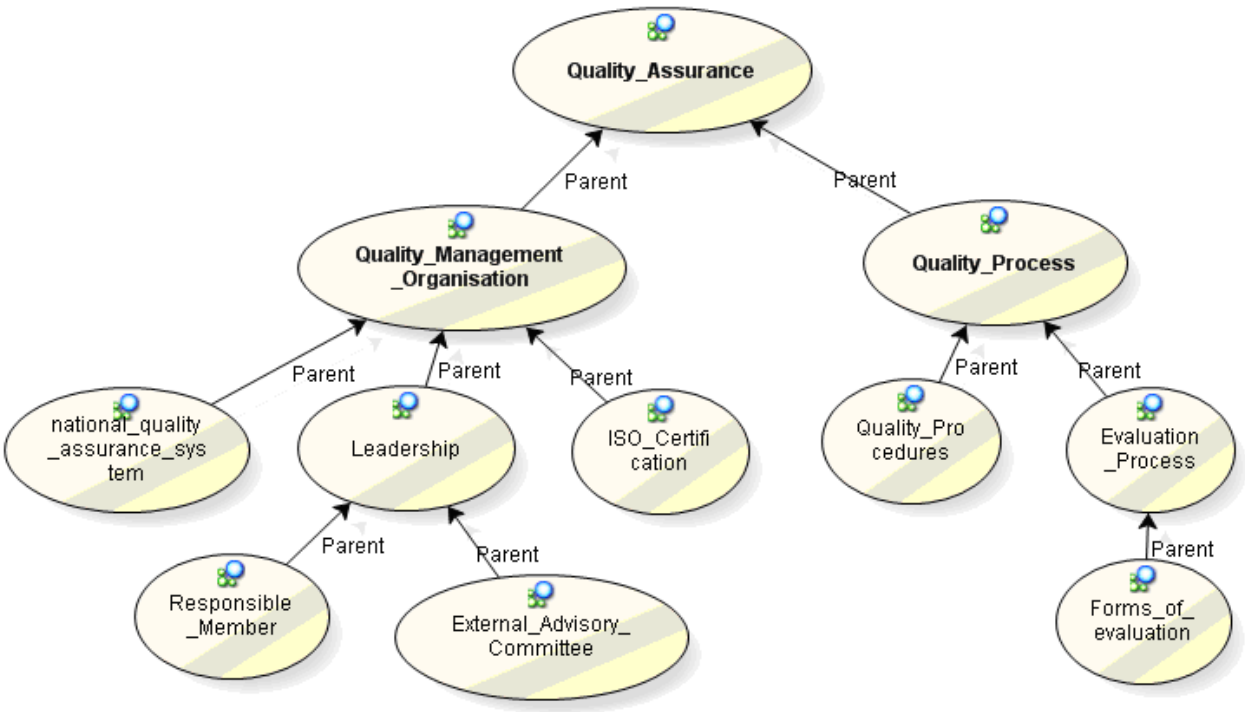

Figure 6. Tree for the Quality Assurance dimension

The category "quality management organisation" refers to the description of the organisation of quality management/ control, particularly regarding the existence of ISO Certification, the description of the leadership system (considering the existence of an external advisory committee and/or a responsible member within the HE institution) and the overall national quality assurance system, which may be considered as the broad background.

Furthermore, the category "quality process" is related to the process of quality control, namely concerning the description of procedures in use and of the evaluation process.

7.1. Quality Management Organization

a1. National quality assurance system

Portugal, **Sweden** and **Lithuania** have Centres for evaluating and accrediting the national courses.

In **Lithuania**, the Centre for Quality Assessment in HE (SKVC) developed external quality assurance policy in research and HE.

> *"Each year university provides the study programs to SKVC for external assessment and accreditation according to the order regulated by the Ministry of Education and Science."*

In **Portugal**, it was recently created the national Agency of the Evaluation and Accreditation of HE ("Agência de Avaliação e Acreditação do Ensino Superior"). This Agency is a private foundation founded by the Portuguese Government. Its mission is to make the evaluation and accreditation of HE Institutions and their cycles of studies. Also, it has to perform the duties inherent to the integration of Portugal in the European system of quality assurance in HE.

In **Sweden**, there is a Swedish National Agency for HE that has the aim of reviewing the quality of HE. This work includes:

- *Evaluating subject areas (main fields of study) and study programmes*
- *Granting degree awarding powers*
- *Conducting quality audits of higher education institutions (HEIs)*
- *Conducting thematic evaluations.*

In Sweden, this quality assurance will guarantee the following purposes:

- *Individual students have the right to demand that their course or study programme is of a high standard.*
- *Employers in the public, private and voluntary sectors have a need for highly trained graduates.*
- *The general public is entitled to be assured that high levels of taxation result in high standards.*
- *In a global world, Swedish higher education must retain a high standard.*

The Swedish National Agency for HE's quality assurance policy has been developed in accordance with the European Network for Quality Assurance's (ENQA) Standards and Guidelines for Quality Assurance in the European HE Area.

In UH:

The self certification within the framework of the Bologna Process was round off with the conclusion of independent international experts showing that the National Framework of Qualifications in Higher Education in Flanders is compatible with the overarching Framework for Qualifications of the European Higher Education Area (QF-EHEA). This is formally confirmed by the Accreditation Organisation of the Netherlands and Flanders (NVAO): http://www.nvao.net/nqf-fl.

For Flanders the Accreditation Organisation of the Netherlands and Flanders (NVAO), acts as the independent quality assurance agency which verifies whether the programme meets the predetermined quality and level requirements.

The accreditation investigation is based on the internal quality assurance system under the autonomy of the higher education institutions and on the results of the external quality control of the programmes. The accreditation quality mark guarantees that the undergraduate/graduate has acquired general and specific competences associated with an internationally recognised Bachelor's or Master's degree.

a2. Leadership

- **External Advisory Committee**

The **UA**, **Hasselt University**, **KTU** and **KTH** refer the importance of getting advice from external committees.

The **UA**, for example, submitted itself to an external evaluation made by the EUA (European University Association), whose experts recommended the great necessity of strengthen the internal mechanisms of quality assurance and evaluation.

The **KTH** employed a former University Chancellor (from the Swedish National Agency of HE) to work on the University quality assurance.

The **KTU** ordered in 2000 and in 2004 an evaluation report to the Salzburg Global Seminar.

> *"(…) in 2000 university asked the seminar of Salzburg to perform external institution evaluation. In order to identify the reversible effect the evaluation was repeated in 2004. The evaluation team noted that since 2000, KTU is very improved in response to comments received after the previous visit of the Salzburg Group."*

In **UHasselt** on regular base, graduated students were asked to evaluate new plans.

- **Responsible member**

The organizational member responsible for quality assurance differs from each partner.

In **KTU** there is a Department of Study Quality and monitoring that has the responsibility of guarantee the studies quality. This department and his main provisions are approved by the Senate and are usually chaired by the Dean.

In the **UA** there is an Office of Quality, Evaluation and Procedures (http://www.ua.pt/gaqap) that has the following mission.

> *"to promote and assure quality, to permanently evaluate and to define the standards of procedures and their practical implementation."*

Also, there is, since 1997, a Vice-Rector responsible for the internal quality assurance.

In **KTH** the responsible member for quality assurance issues is the Dean of Faculty (KTH has only one faculty).

Finally, in **Hasselt University** the Quality assurance is part of the task of the education management team and the faculty.

a3. ISO Certification

Regarding the quality certification, **all the partners** refer the inexistence or lack of knowledge regarding the existent of such a certification. However, some of the partners presented some related experiences of certification.

The **Lithuanian** certification process, for instance, is based on the Senate Resolution No. 148 of 28 April of 2004 and in some elements of the ISO 9001:

> *"Some of elements were already suitable from scientific and technological research quality assurance system that already was established (e.g., contract management, infrastructure management, procurement, etc.). For each activity in the system the normative acts are develop and adopted (Senate Resolutions, Rector's orders, regulations, rules, descriptions of procedures, documents, forms, etc.). Many of the activities are being performed by means of academic information system."*

This partner also had to implement new forms of certification, due to the fact that the University had to respond to external needs from companies and from the industry that needed quality assurance system that corresponds to the ISO 9001 standard.

> *"The first license it granted from the State Nuclear Power Safety Inspectorate (VATESI). During the period 2000-2006 it was accredited four testing laboratories in accordance with*

ISO 9001 system. In 2007 this system was also licensed for metrological supervision and inspection activities that are being carried in University."

Even though the University is not certificated by ISO standard, some of their laboratories are, due to economical interests. Both **UA** and **KTH** are also in a process of quality certification.

Furthermore the **UA** has been recognized by labels that certificate the academic offer and information, and the quality of the procedures and practices followed by this University, as well as the transparency and legibility of the courses and the degrees in relation to the HE European Area:

"However, the University of Aveiro was recognised with the ECTS Label - an European label that proves the quality of the academic offer and information, and also of the student mobility in the HE European Area."

Also, the **UA** was recognised with the DS Label (Diploma Supplement Label): a European label which proves the quality of the procedures and practices followed by this University, as well as the transparency and legibility of the courses and the degrees in relation to the HE European Area.

7.2. Quality process

b1. Quality procedures

The quality procedures of the partner institutions are internal and external.

In **Lithuania**, **Portugal** and **Sweden** there is a National Agency that has the responsibility of giving an external assessment to the study courses and their outcomes.

Internally **KTH (Sweden)** has a quality plan for 2007-2011 which is guaranteed by a specific committee and by the faculty Dean.

The **KTU (Lithuania**) has an internal study for quality assurance system that covers the following aspects:

- *The mission of the study programme, goals and objectives, perspectives and long-term development.*
- *Relationships with external partners, to improve quality and demand of study programme.*
- *Supply for student needs, staff and financial management.*
- *Evaluation system and evaluation criteria for assessment of pedagogical, scientific and other qualification, competency and activity of teachers.*
- *Policies and procedures of students acceptance into the study programme.*
- *Teachers' and students' competence and motivation improvement means.*
- *Accessibility of learning means and study support system.*
- *Knowledge, competences and skills assessment system*
- *The material base of studies and related scientific researches.*
- *The storage system of financial and material resources.*
- *Success of graduates' career.*
- *Relationship with the external study quality assessment systems.*

The structure of internal quality assurance system and main provisions are approved by the Senate.

b2. Evaluation process

Since 1994, the KTU proposes students to evaluate the content of study modules and their teaching quality. This evaluation is gathered online and it is not compulsory:

> *"The electronic questionnaire of evaluation of study modules is delivered at the end of each semester in the private fields of students in the academic information system in the web page of University. Participation in the survey is voluntary and students can reject the questionnaire. However, they have to log in to the system for confirmation of rejection by giving the reason of rejection.*
>
> *This survey aims that each module would be evaluated by all students that selected it and so would help to improve it. The long-term survey results use committee of study programs certifying study modules, committee of attestation, faculty administration evaluating teachers work, student agencies. General survey results are discussed during the meetings of rectorate, deanery and departments. Only the summarised statistics of survey results are made public.*
>
> *Teachers are able to see the survey results (number of students that selected the module, number of students that evaluated the module, the distribution of students in frequencies and percents), when log in to the academic information system in own teacher working areas. Teachers are able to see evaluations only of their modules. Faculty administration (deans and department heads) can see evaluation results of all modules that have been taught in the department, when log in to the academic information system."*

The **UA** started in 2008 the implementation of a new internal system of quality evaluation and assurance. The data will be analyzed and this system will be broadening available to all the University to evaluate the teaching and learning process.

> *"This new evaluation model foresees four moments: (i) Diagnosis; (ii) Improvement; (iii) Assurance; and (iv) Supervision. In this model, all the actors involved in the teaching and learning process will be heard - students, teachers, teacher coordinators of the course, students' delegates of each course.*
>
> *The first moment will begin the evaluation process with the evaluation of the Curricular Units. The results will take into account information gathered using 3 "instruments":*
>
> — *Student evaluation using and online questionnaire;*
> — *The perception of students, delegates of each course, and the teachers, coordinators of each course, who will elaborate a report;*
> — *Statistic information available through the students' individual platform PACO*
>
> *With the information available through the first moment, teachers will elaborate an online report concerning each Curricular Unit they teach. They may refer the teaching and learning conditions and, if they want, they may do a self-evaluation.*
>
> *In this report, the responsible teachers for each Curricular Unit will produce a global analysis, which will be based on the results of the first moment and on the teachers' report.*

Responsible teachers also have the opportunity to design an Improvement Plan, which may be read and analysed by the Course commission.

In the third moment, the reports of each Curricular Unit will be analysed in each Department: the (conselho directivo) has to gather a commission whose members have to produce a global report to jointly analyse the different Curricular Units available in that Department, to identify cases of good teaching and learning practices and identify the resources that are needed to implement the Improvement Plan.

Finally, the Supervision will be made by the Pedagogical Commission (Conselho Pedagógico), whose members may have a role of mediators if necessary. Also, they will analyse and disseminate the results."

The **Hasselt University** also uses online questionnaires to evaluate courses by the students. All study programmes have an evaluation team consisted of staff and selected students.

Final considerations
Acknowledgment

Final considerations

HE is changing rapidly, facing new challenges both at institutional and at individual levels. Due to the increase competition in national and international level, institutions are struggling to diversify their target-audiences, offering attractive programs for lifelong learning namely for professionals, unemployed, and elderly. Also distance education programs, made possible by the increasing use of communication technologies, are receiving special attention from an increasing number of HE institutions, because they are a natural evolutionary path that may foster a growth number of students, namely international students.

Innovation is often promoted by external influences. The Bologna Process had the potential to induct the so expected auto-transformation at the national, institutional and individual level (Alarcão, Andrade, Couceiro, Santos & Vieira, 2006), but it is our responsibility to proceed to changes that meet the country economic and cultural reality.

Full implementation of educational concepts/models, new learning and teaching methods, and the use of modern information communication technologies (ICT) needs the involvement of teachers, students and other educational staff:

> *"Change is hard and typically does not occur without a group of colleagues who care and provide support and encouragement for one another. The research support for cooperation among faculty is just as strong as that for cooperation among students." (Smith, Johnson & Johnson, 1992, p.36)*

This study aggregated different perspectives with more similarities than differences. In spite of the particularities of each educational system and without clearly mentioning it the four institutions follow a learning concept of teaching centred on the student. The teacher is seen as a facilitator while the student is the active agent that pursues knowledge and develops his competences.

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