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Teaching and Learning Practices and Company Collaboration in Higher Education Institutes in Europe

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Teaching and Learning Practices and Company Collaboration in Higher Education Institutes in Europe

SOCCES PROJECT
Baseline study
Part 01-A3

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This study dealt with the educational environment in the higher education institutes participating in the SOCCES project. It is part of the baseline study that was realized to ensure a comprehensive background knowledge for the SOCCES project.

The goal of this study part was to develop an understanding of teaching and learning in higher education institutes in Europe and company collaboration.

The study consisted of a theoretical and an empirical part.
The theoretical section defined basic concepts such as skill, competences and assessment. Further on various modern concepts of learning were discussed such as passive or formative and experiental or social learning. Three innovative learning solutions were presented.

The empirical part focused on the teaching and learning practices in higher education institutes.
Qualitative methods were used for gathering the data. The questionnaire is presented at the end of the report.
The results were analysed with the help of theoretical background.

The results showed similarities between the higher education institutes which applied innovative teaching and learning approaches. However, all studied organisations did not apply such approaches and therefore quite important differences were also noticed. The biggest difference was in company collaboration and in assessment practices.

Although literature suggested that innovative teaching and learning methods are widely used also in higher education, this is not the case in all teaching and learning environments. Traditional teaching and learning is still widely used in higher educational institutes and company collaboration can be limited to occasional guest lectures and students' trainee periods. Therefore, it is necessary for the project to evaluate in which circumstances of teaching differents elements of learning are measured, what similar elements can be developed for measuring and what is to be left open for local adaptation and what are the limitations related to measuring.

Keywords: key compentences, entrepreneurship, social skills, learning environment, learning process

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1 Introduction

This report is part of a European project called SOCial Competences, Entrepreneurship and Sense of Initiative - Development and Assessment Framework, SOCCES. The project is funded by the Erasmus + program and is part of the Erasmus+ "Key action Cooperation for innovation and the exchange of good practices" in the field of "Strategic Partnerships for higher education". Socces project started in February 2015 and ends in January 2017.

Socces project is coordinated by Coventry University (UK) and run in collaboration by Laurea University of Applied Sciences (FI), Stichting NHTV Internationale Hogeschool Breda (NL), Alma Mater Studiorum-Universita Di Bologna (IT), St. Cyril and St. Methodius University of Veliko Turnovo (BG), Université Montpellier 1 (FR) and Savares B.V. (NL).

The aim of the project is defined in the project application in the following way: "The aim of SOCCES is to develop and pilot a framework for the methodical assessment for two competences that are very important for working life - namely the Sense of Initiative and Entrepreneurship, and Social competences. The developed framework will be translated to a concrete assessment module that can be used in different educational environments. The module will include a collaborative, virtually enabled assignment and will be accompanied with virtually enabled teacher instructions." (SOCCES, Erasmus+ application, Form hash code: 5C4E4E4F9B4A5251.)

During the first months of the project a baseline study was realised to create common understanding of the practices, needs and possibilities for further development. The study covered the participating higher educational institutes (HEI) and local entreprises. The baseline study concentrated on existing teacher practices, mapping of the current educational environments and practices and defining the main development needs regarding the assessment framework and the defined competences and the related skills. The purpose of the baseline study was to ensure a comprehensive background knowledge for the SOCCES project and enable establishment of a common understanding and shared views "to form a solid basis for the development of the framework and methodology". In addition the study aimed at defining the specifications for the assessment tools and boundary conditions for module and the implementation of the included pilot testing. "The preconditions will be specified for the teaching methods, case studies as well as the (inter)organisational processes"(SOCCES, Erasmus+ application).

This report is part of the study. It concentrates on the teaching and learning practices and company collaboration in HEI in Europe. All the results of the study are published in a collated open source report on the project internet site.

2 Theoretical background

When thinking of the teaching and learning practices and company collaboration in HEI it must be noted that the most common way of university teaching is still lecturing to large, rather passive recipient audiences (Gentelli, 2015). This ”traditional, didactic lecturing” is an inexpensive way of university teaching that can assure a knowledge basis but due to its passive nature it remains the least effective teaching method (Butler, 1992). For promoting thought, changing attitudes, or teaching behavioural skills (Bligh, 1972) other approaches should be included in teaching (Gentelli, 2015).

In the 21st century, knowledge is no longer power! Being able to access information, apply and transfer it to problems and issues at hand is of greater value. According to the recent EU Communication (2012) our education and training systems do not provide the right skills for employability.

Skills are, on one hand, described as human characteristics which can develop through education, training and experience although personal traits play an important role in developing some skills (OECD, 2011). On the other hand, skills can be described as “generalisable attributes of individuals that confer advantage in the labour market” (Esposto, 2008).

While skills are considered as human capital or potential, the competency approach focuses on what the people can do rather than what they know. Competencies are described as “behavioural manifestations of talent” (Boyatzis, 2008) or observable aspects of performance in specific circumstances (Spencer & Spencer, 1993). Competencies are not personal constructs or traits but rather dispositions that can be attributed to individuals, teams and organisations. They are latent attributes identified and defined in a community of practice (Spencer & Spencer, 1993). The goal should be to teach learners to develop using their skills and knowledge in successful ways, in creating competencies (McKinney & Denton, 2005).

Both teaching and assessment require modernisation especially “in the areas of problem solving, critical thinking, collaboration and entrepreneurial initiative” (EU Communication, 2012).

Assessment refers to all activities undertaken by teachers, students and their peers for providing information on the learning process and the outcome during the studies, the development of knowledge and skills (Black & Wiliam, 1998). Summative assessment concentrates on grading the outcome where as formative assessment is a part of the teaching and learning process. Formative assessment guides the student or team in the learning process, allows feedback and encourages students’ and student groups’ achievements while promoting a culture of shared purpose and learning (Guilland & al, 2013).

Education should be developed to better correspond to the needs of real-life situations and be the focal point of teaching and learning, thus enabling students to develop appropriate competencies for working life. Partnerships between higher education institutions (HEI) and employers are of key importance in enhancing learners' employability, entrepreneurial potential and familiarity with the working world. As stated by the Council of the European Union (9876/09), "competitiveness and growth of Europe's economy could be improved by putting the knowledge triangle to work, notably by developing partnerships between employers and education and research institutions which are aimed at fostering innovation and ensuring its transfer into practice." In working life control, compliance, and compartmentalisation (the 3 C's) are being outplaced by ideas, information, and interaction (the 3 I's) (Ketz de Vries, 2006).

Wilson-Medhusrt (2008) claims that "learning experience is more likely to have significant positive gains for the learner if they are active rather than passive recipients within it" and cites McGowan & Knapper (2002) who wrote the following: "Learning in a passive system has a much greater tendency to be both superficial and quickly forgotten. Active involvement in learning helps the student to develop the skills of selflearning while at the same time contributing to a deeper, longer lasting knowledge of the theoretical material…..[and] …it is almost the only effective way to develop professional skills and to realise the integration of material from different sources."(McGowan & Knapper, 2002, p.633). This same thing was presented by Higgins & Elliot (2011) Figure 1.

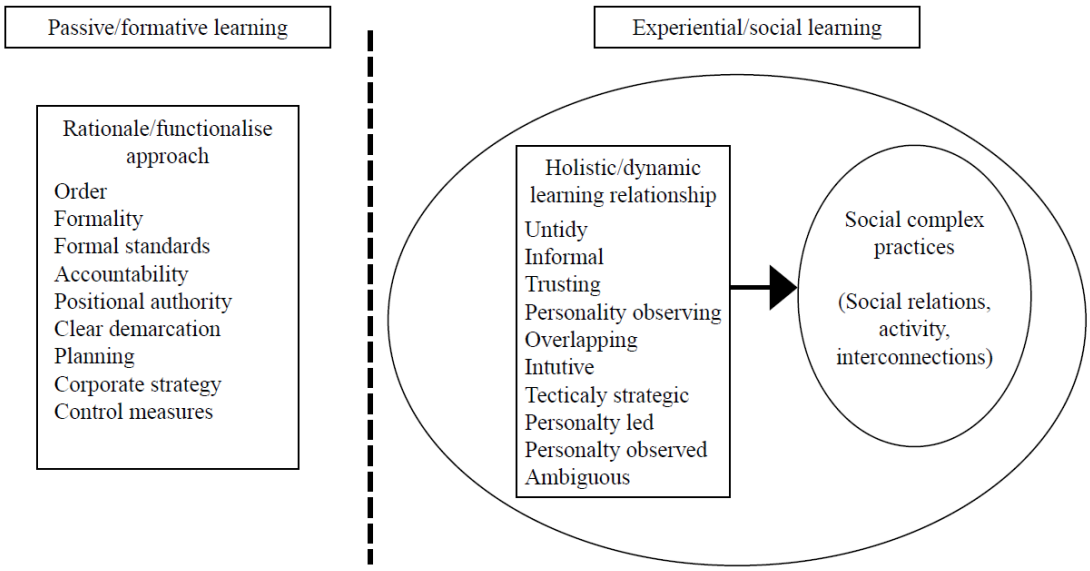


Figure 1: Functional and social learning relationships affecting entrepreneurial education
Source: Higgins & Elliot, 2011.

Authentic contexts and related communication with peers and professionals promote learning (McLoughlin & Luca, 2002). Deeper and more regular collaboration should be developed between education and business bringing the learners closer to the reality of working life. Educational programmes at all levels should consider - and whenever possible, reflect - authentic real life applications (Guilland & al., 2013). Particularly on the post-secondary level, a key function of teaching and learning today is preparation of students for careers and the rapidly evolving work place of the 21 century. Even though often ignored, also business and entrepreneurship are fields where practice is required for learning just and a shift should be made from passive, formative learning towards experiential learning (Figure 1) (Higgins & Elliot, 2011; Pfeffer & Fong, 2002).

Team work and collaborative learning

In future working life, the capability of working in teams and networks are considered as important as job related skills. Collaborative assignments as a part of the education in HEI are a means of teaching team work and changing attitudes towards it. Successful team work enables students to develop and show pertinent communication, responsible interdependence, and psychological safety, as well as a common purpose and a clear understanding of roles and task. (Guilland, Harmoinen &Saloranta, 2014.) Collaborative teaching and learning in the form of e.g. project- or problem-based learning approaches offer learners the possibility to work together in small groups and strive to achieve common objectives around real life challenges (Soetanto, Childs, Poh, Austin & Hao, 2012).

3 New teaching and learning solutions

New models of teaching and learning have been developed since several decennies and they are also widely adapted. This report describes briefly three teaching and learning approaches that are in practice in the SOCCES partner organisations, namely Problem-based Learning (PBL), Activity Led Learning (ALL) and Learning by Developing (LbD). Moreover the so called Blended learning is presented. The first mentioned, PBL, is applied by Stichting NHTV Internationale Hogeschool Breda (NHTV), ALL is applied by Coventry University and LbD by Laurea University of Applied Sciences. Common to the previously mentioned three higher education institutes is that they also all apply the Blended Learning approach.

Problem-based Learning (PBL)

Problem-based Learning (PBL) was developed for medical education to help students to use learn complex things instead of purely memorizing by heart fragments of information. Even though some sources claim that the roots of PBL are in the 1950's, the development of the method has been is generally credited to the work of medical educators at McMasters Univer-

sity in Canada in the 1970s. It has been considered as the most innovative teaching and learning method and it is eversince widely adapted at various levels of education, including HEI. Therefore it has also widely been studied and documented. (Hung, Jonassen & Liu, 2008.)

Problem-based learning is practice based meaning that students practice solving problems instead of purely learning about problem solving. Jonassen (2011) describes PBL in the following manner: "PBL is an instructional methodology that is problem focused, in which content and skills to be learned are organized by problems. Knowledge building is stimulated by the problem and applied back to the problem." "… the problem to solve is the focus of all learning. … The building blocks of problem-based learning environments are cases"… a case is an instance of something that may comprise anything from a sentence level example to a complex, multi-page or video-based case study."(Jonassen, 2011.)

"Traditional models of instruction assume that students must master content before applying what they have learned in order to solve a problem. Problem-based learning reverses that order and assumes that students will master content while solving a meaningful problem. ….The problem provides the purpose for learning."(Jonassen, 2011.)

PBL is student centered, self-directed and self-reflective. Tutors/teachers have a role of a facilitator. (Jonassen, 2011.)

PBL promotes creation of knowledge and skills for future employment. At the same time, PBL "enhances student experience and motivation through engaging activities in the learning process". In this way, "PBL promotes 'deep' (in contrast to 'surface') learning, which enables the learners to acquire many transferable skills for employment". Most PBL applications involve some forms of group activities, the learners gain knowledge and learn key employability skills such as communication, collaboration and teamworking skills in solving the given challenge. (Soetanto & al., 2012.)

Activity Led Learning (ALL)

Activity Led Learning (ALL) has been developed at Coventry University. The aim of ALL is to promote student engagement, retention and employability. A significant component of the teaching and learning to achieve this aim is team-based project work." (Soetanto & al., 2012.) Fundamentally Activity-Led Learning is about utilising and developing learners' capabilities to be self-regulating and to make good judgements. "The motivation for learning is provided by stimulating activity that engages and enthuses students and creates challenge, relevance, integration, professional awareness and variety." (Activity Led Learning.)

Sarah Wison-Medhurst (2008) describes the ALL approach in the following manner: ”An activity is a problem, project, scenario, casestudy, research question or similar in a classroom, workbased, laboratorybased or other appropriate setting and for which a range of solutions or responses are appropriate. Activities may cross subject boundaries, as activities within professional practice often do. Activity Led Learning requires a selfdirected inquiry or research-like process in which the individual learner, or team of learners, seek and apply relevant knowledge, skilful practices, understanding and resources (personal and physical) relevant to the activity domain to achieve appropriate learning outcome(s) or intention(s). To be appropriate, the learning outcomes or intentions must be consistent with the aims, outcomes and intentions of the programme of study with which the student is engaged.” (Wilson-Medhurst, 2008.)

Learning-by-Developing (LbD)

Learning-by-Developing (LbD) is a development-based teaching and learning model. It challenges traditional teaching and learning activities (Kallioinen, 2011). LbD is developed and implemented in Laurea University of Applied Sciences (Laurea), Finland, since 2006 throughout all study programs and at all levels. Pragmatic philosophy of education is the basis in Laurea’s pedagogic strategy (Raij, 2015, p.11).

LbD concentrates on developing a partnership with industry and promoting creativity, competitiveness, employability and the growth of an entrepreneurial spirit (Kallioinen, 2011). Teaching and learning according to the LbD brings together students, lecturers, experts from working world and in research and development (R&D) on an authentic project, and produces new practices and competencies. These experts enable scaffolding meaning that the complexity of the challenges is adjusted to the learners’ capacities. Limits are gradually removed ”when the learners gain knowledge, skills, and confidence to cope with the full complexity of the context” (Pirinen & Rajamäki, 2008).

Students develop competencies needed in future working life mainly by working together on authentic working life development projects and in close collaboration with local private and public partners. This is consistent with today’s business world requirements (Pirinen & Rajamäki, 2008).

LbD is based on five principles: 1) authenticity, 2) partnership, 3) experiencing, 4) investigative approach, and 5) creativity. LbD consists of three perspectives of learning namely knowledge acquisition, participation and knowledge creation. (Kallioinen, 2011.)

Various types of learning occurs namely individual’s learning; community’s learning and building new know-how. LbD develops (1) generic competences such as work or life

knowledge and (2) skills and subject specific competences. These may be seen as a pre-studies for third set (3) creativity and innovation part of studies. (Pirinen & Rajamäki, 2008.)

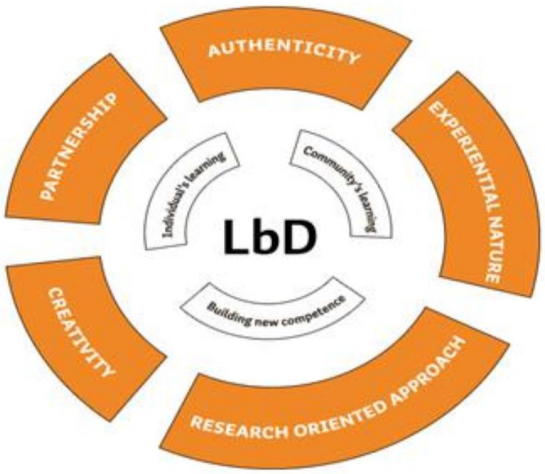


Figure 2: Learning by Developing (LbD). Source: Kallioinen, 2011.

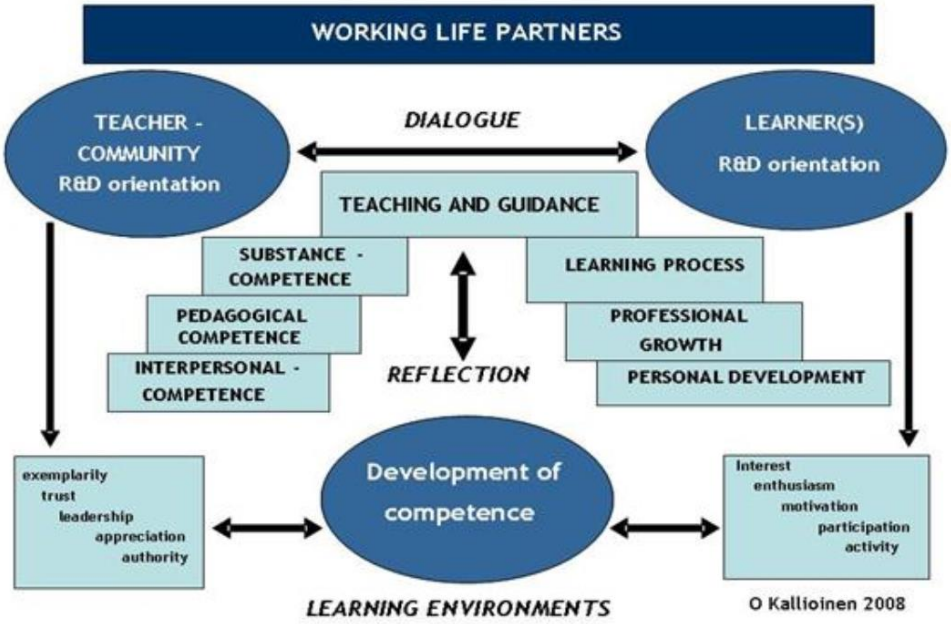


Figure 3: Factors that promote learning in the LbD model (Kallioinen, 2011).

Figure 3 presents some elements that promote learning in the LbD approach. In the teaching process substance competences are important but also pedagogical and interpersonal competences are required. The learning process is accompanied by professional growth and personal development.

Blended Learning

Blended Learning consists of face-to-face and online teaching and learning. Oral, either internet based or face-to-face communication, is blended with online writen communication, simulations, tutorials and individual and/or group assignments according to the intended educational purpose (Pirinen & Rajamäki, 2008).

Blended Learning supports learning experiences outside the classroom and even internationalisation of studies (Garrison & Vaughan, 2008; Pirinen & Rajamäki, 2008). Moreover it brings "(1) added value for learning assisted by multimedia, artificial intelligence and/or virtual reality and (2) time saving proffered by network technologies" (Pirinen & Rajamäki, 2008).

Blended Learning can consist of group assignments and team work. Soetanto & al (2012) studied the factors influencing the success of online group assignments which can also be called "virtual collaborative learning", and the impact on this approach on students' performance and experience. On the basis of their study a model was created (Figure 4).

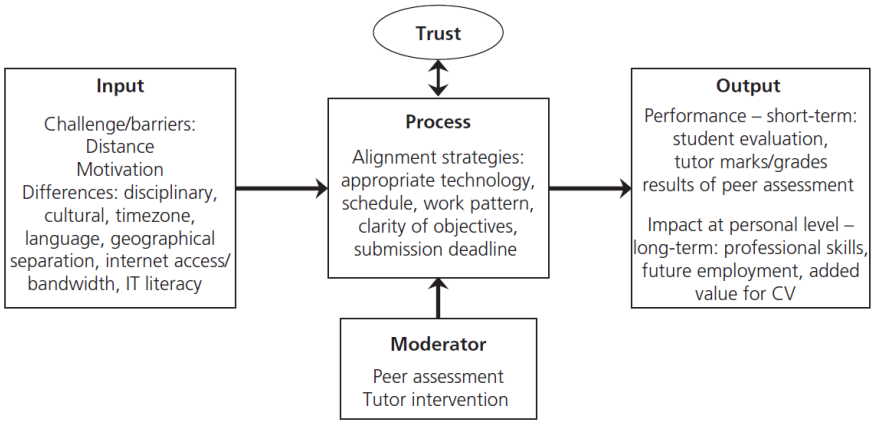


Figure 4: A model of virtual collaborative learning. Source Soetanto & al. (2012)

The course consisted of group and individual tasks which then further enabled assessment both by the teacher and the peers in the group. Several positive and negative elements of collaborative virtual learning were identified (Figure 5).

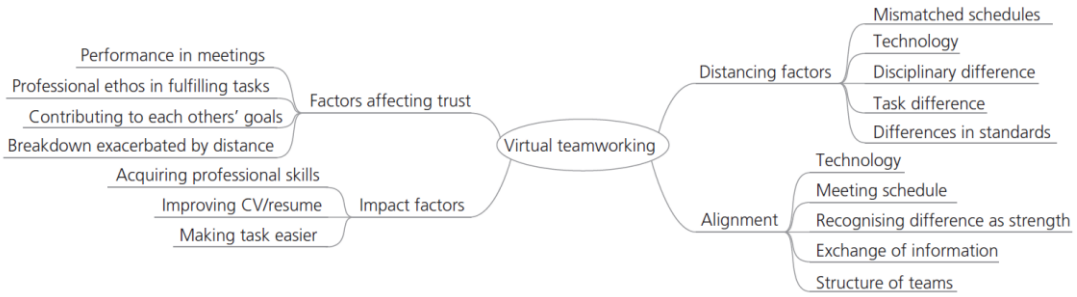


Figure 5: Different influences on virtual teamwork. Source Soetanto & al. (2012)

The study concludes the importance of designing the group assigment tasks in such matter that genuine collaboration takes place. "The assignment tasks should be designed, based on a higher (i.e. reciprocal) level of task interdependency" (Soetanto & al., 2012).

4 Goals and research questions

The goal of this study was to develop understanding of the teaching and learning practices and company collaboration in HEI.

The research questions were (SOCCES plan p.23):

1. What are the existing teaching practices ?
2. What are the current educational environments and practices?
3. What are the main development needs regarding the assessment framework and the defined competences and the related skills.

The complementary research questions were

1. What collaboration is practiced between students, teachers and industry in HEI?
2. What are the possible and/or most important stumbling blocks concerning the use of a joint learning module and assessment method in different educational environments?

5 Materials and methods

The informants of the study were the partner organisations which consist of HEI from Southern, Northern, Eastern and Western Europe. Through these cases the study aimed at building a larger picture of the practices in HEI in Europe.

For collecting provide rich qualitative data a qualitative approach was chosen. A questionnaire with open ended questions was created. The informants were expected to give as much

insight as possible on the on the teaching and learning practices in higher education institutes.

The questions aimed at finding answerts to the following main questions ?
1. What are the practices of teaching students?
2. What are the practices of company collaboration ?
4. What methods are used for assessment?

The interview questions were the following:

The first question was:
Q1a: How students are taught within your organization?

Complementary questions were:
Q1b: How many hours of lecture do the students have compared to other learning activities?
Q1c: In what other ways do the students learn? For example independent exercises, team assignments, discussions, etc.?

The second question was:
Q2a: How does company co-operation take place within your organization?

Complementary questions were:
Q2b: How does the company contribute to the student's learning? How often does the company contribute to their learning?
Q2c: How do the students help the company?
Q2d: What is the main goal for co-operating?
Q2e: How do you ensure that students learn the skills that are presented in the course while they participate in the company co-operation?
Q2f: How are the students evaluated when participating in a company co-operation project?

Probing was used for triggering informants to think about the multiple ways in which. The main probe consisted of an example of company collaboration in the context of LbD in Laurea.

The questionnaire was tested in Laurea University of Applied Sciences by four teachers. After modifications the final questionnaire was addressed to the six HEI participating in the SOCCES project.

The final questionnaires were sent by email to the representants of the five partner organisations in March 2015. Altogether nine answers were received during the months of April - May 2015.

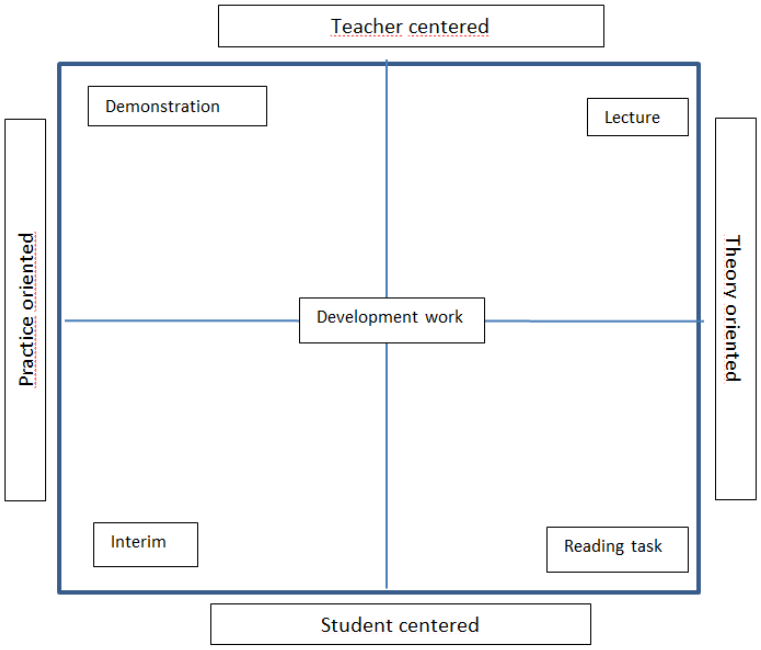
A qualitative data-driven analysis was realised by collating first the responses. Then the entire data was coded. Further codes were organised into themes and subthemes and a thematic map developed. Finally appropriate examples of each theme were selected for the final report.

The analysis was executed by experienced researchers who also are familiar with the LbD model and related practices.

6 Results

The results of the qualitative questionnaire are presented in a collated form (Appendix 1). For analysis and interpretation a preliminary figure was created (Figure 6). This illustrates four possible dimensions of the educational process. The figure gives four examples in relation to these dimensions. The dimensions in this example are on the one hand teacher vs student involvement and theory vs practice orientation.

Figure 6. Educational processes - teacher and student involvement in teaching and learning theory and practice



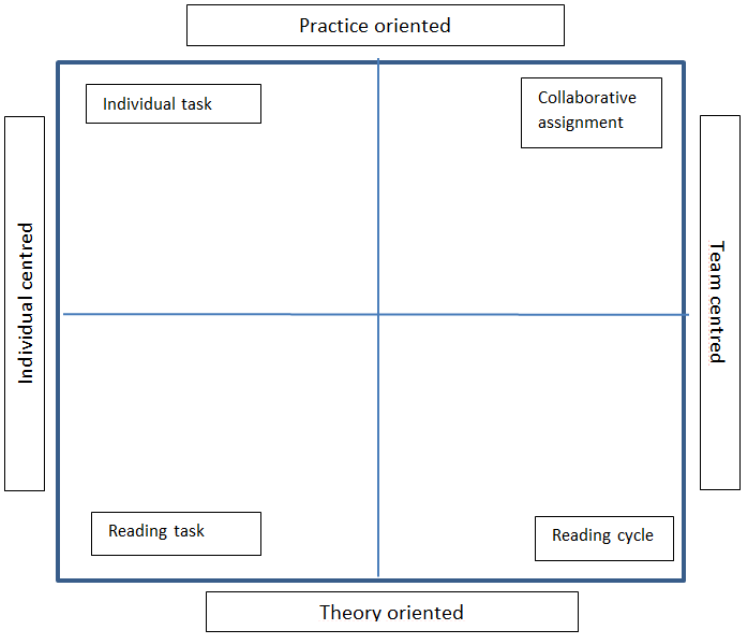
According to the results the majority of the HEI that participated in the study used a variety of methods in teaching. Face-to-face lectures represented some 10-90% of all teaching in various study units. All answers revealed also other educational practices and in all cases development work had a place in the educational process.

Some of the organisations were more practice oriented and student centered whereas in some case(s) theory orientation was the prevailing approach. There was no reason to think that any of the participating organisations would practice only a purely theory oriented educational process.

Another example (Figure 7) presents the educational process from another point of view. In this figure the approach is more from the point of view of the student. In this example it is question about learning theory or practice individually or in a team. A collaborative assign-

ment guides the team centred practice oriented teaching and learning process while a literature assignment guides the orientation of the team work realised by a reading cycle.

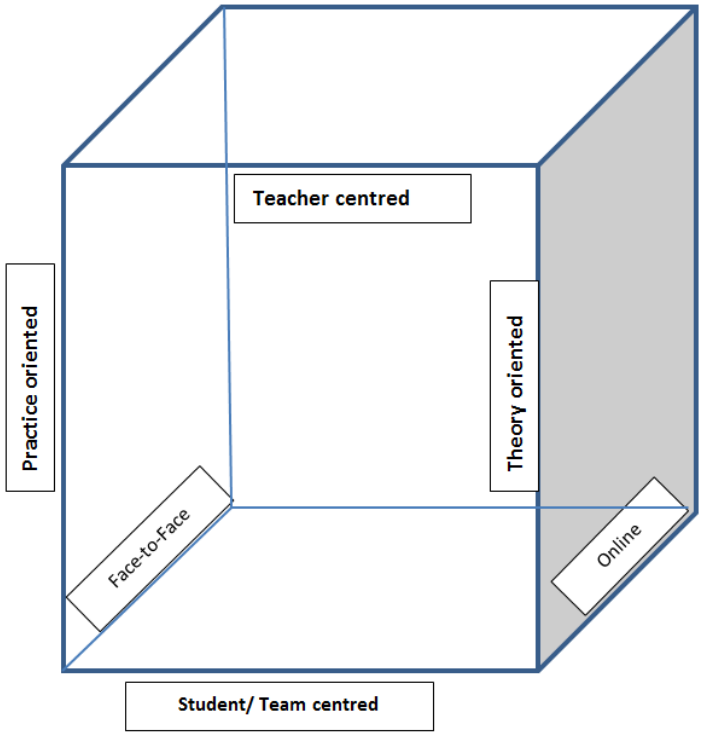
Figure 7. Two dimensions of the educational process –



According to the answers the educational process was in most cases individually centered (Figure 7). Team centered education was the prevailing approach in one case. In two other HEIs team work/collaborative assignment was used as an alternative form of education. In two cases all education is individually oriented.

The possibilities of studying the educational process are various and also the possibility of a third dimension can be added (Figure 8). Our example is based on figure 6 where the third dimension are the means of education. In this example face-to-face and online education are presented as two opposites.

Figure 8. Three dimensions of the educational process - teacher and student involvement in teaching theory and practice



To clarify figure 8 the following example is presented:
Learning-by-Developing, the operational model of Laurea, is an educational process that combines all the three dimensions: development work is guided by theory and practice, teachers and other experts guide the students' individual and team work. Teaching is based on the blended learning approach where the face-to-face and online methods of teaching and learning create "a thoughtful mix".

Blended learning combines face-to-face and online teaching and can be considered to be situated somewhere in the middle of the two faces - face-to-face and online teaching methods.

Baseline study report 01-A2 tackles more specifically the issue of virtual (and blended) learning.

7 Summary and conclusions

A qualitative interview was performed to create understanding of the teaching practices in the participating HEIs and how real-life challenges and company collaboration are integrated in the educational environment.

The interviews were performed in the six participating HEI. The collated answers are presented in appendix 1.

The first research question was:

1. What are the current educational practices in HEI?

The study showed that there were similarities in the educational processes in the studied HEIs. At the same time there seemed to be also quite important differences but these did not compulsory concern a whole HEI but was rather related to some teacher or a specific study program or study unit.

The second research question was:

1. What collaboration is practiced between students, teachers and industry in HEI?

Company collaboration exists at some level in all studied HEIs. The magnitude and the modes of collaboration vary. This may be due to cultural differences but also depend on the nature of the HEI. In universities of applied sciences company collaboration is most probably more evident than in traditional universities which tend to be more theory oriented. However practioners from working life are invited as guest lecturers to bring their input and students are required to complete interim periods to get in contact with working life.

The third research question was:

2. What are the possible and/or most important stumbling blocks concerning the use of a joint learning module and assessment method in different educational environments?

According to the study in some cases the students might not be very accustomed to searching for information on their own and on their own initiative. The tradition can be that the teachers are the informants who bring the information or make the information sources available by assigning the books or articles to be studied. There might even be a source of a stumbling stone in these cases.

Although students of different studied HEIs may have very different amount of contact with working life, no stumbling stone can be clearly connected to the question concerning company collaboration.

It is rather likely that a stumbling stone is related to collaborative assignments and team work. In some studied HEI's students are not accustomed to learning together through collaborative assignments by teamwork. Team work requires specific skills such as assuming one's role in the team, appropriate communication and respecting of engagements and timetables. These cannot be learnt only through reading but necessite practice and ameliorate with experience and feed back.

Another rather likely stumbling stone is related to peer assessment and feed back. Peer assessment is not practiced in all studied HEIs. It has to be taught and students should be motivated to learn to give and receive peer feed back.

In some of the studied HEIs educational practices do not cover blended learning. The Blended learning approach is "a thoughtful mix of that face-to-face and online learning experiences". Face-to-face oral communication is blended with online written communication, simulations, tutorials and assessment according to the intended educational purpose. Blended learning supports learning experiences outside the classroom and even internationalisation of studies (Garrison & Vaughan, 2008; Pirinen & Rajamäki, 2008). Moreover it brings "(1) added value for learning assisted by multimedia, artificial intelligence and/or virtual reality and (2) time saving proffered by network technologies" (Pirinen & Rajamäki, 2008).

In HEI where blended learning is not practices, students are not compulsory well equipped and accustomed to learning in an online environment. However, the majority of students in all HEI in Europe use Internet regularly and are accustomed to sharing information online. Therefore lack of blended learning approach does not compulsory justify a stumbling stone.

One final stumbling stone can be related to assessment. Students are not in all studied HEI compulsory accustomed to being assessed in other ways than on the basis of an examination. When this is the case, students need to be well informed and motivated to understand and accept other assessment methods. Assessment of collaborative assignments requires specific attention. Also teachers might need training in this issue to be prepared to apply other assessment methods properly and in a well justified manner.

To summarize, none of the presented stumbling stones creates such problems that the problems could not be overcome. In most cases the issues need to be considered and well reflect-

ed when planning the learning module and the assessment methods. Moreover, special emphasis should be given to communicating on these practices both to students and teachers.

Specifications for the assessment tools and boundary conditions for module and the implementation of the included pilot testing. The preconditions will be specified for the teaching methods, case studies, virtual infrastructures as well as the (inter) organisational processes.

Company collaboration exists at some level in all studied HEIs. The magnitude and the modes of collaboration vary. This may be due to cultural differences but also depend on the nature of the HEI. In universities of applied sciences company collaboration is most probably more evident than in traditional universities which tend to be more theory oriented. However practioners from working life are invited as guest lecturers to bring their input and students are required to complete interim periods to get in contact with working life.

According to the study in some cases the students might not be very accustomed to searching for information on their own and on their own initiative. The tradition can be that the teachers are the informants who bring the information or make the information sources available by assigning the books or articles to be studied. There might even be a source of a stumbling stone in these cases.

Even though students of different studied HEIs may have very different amount of contact with working life, no stumbling stone can be clearly connected to the question concerning company collaboration.

It is rather likely that a stumbling stone is related to collabotive assignments and team work. In some studied HEI's students are not accustomed to learning together through collaborative assignements by teamwork. Team work requires specific skills such as assuming one's role in the team, appropriate communication and respecting of engagements and timetables. These cannot be learnt only through reading but necessite practice and ameliorate with experience and feed back.

Another rather likely stumbling stone is related to peer assessment and feed back. Peer assessment is not practiced in all studied HEIs. It has to be taught and students should be motivated to learn to give and receive peer feed back.

In some of the studied HEIs educational practices do not cover blended learning. Students are not compulsory well equipped and accustomed to learning in an online environment. However, the majority of students in all HEI in Europe use Internet regularly and are accustomed to

sharing information online. Therefore lack of a blended learning approach does not compulsory justify a stumbling stone.

References

Black, P. & Wiliam, D. (1998). Inside the Black Box: Raising Standards Through Classroom Assessment. Kappan Professional Journal. Phi Delta Kappa International. Available [online] http://blog.discoveryeducation.com/assessment/files/2009/02/blackbox_article.pdf.

Bligh, D. (1972). What's the use of lectures? Harmondsworth: Penguin.

Boyatzis, R.E. (2008). Competencies in the 21st century. Journal of Management Development 27(1), pp. 5-12.

Butler, J. A. (1992). Use of teaching methods within the lecture format. Medical Teacher, vol. 14(1), pp. 11-25. Available [online] http://informahealthcare.com/doi/abs/10.3109/01421599209044010?journalCode=mte

Esposto, A. (2008). Skill: An Elusive and Ambiguous Concept in Labour Market Studies. Australian Bulletin of Labour 34(1), pp. 100-124.

EU Communication. (2012). Rethinking Education: Investing in skills for better socio-economic outcomes. Strasbourg, 20.11.2012: EU COM, 669 final.

Garrison, D.R. & Vaughan, N.D. (2008). Blended Learning in Higher Education: Framework, Principles, and Guidelines. San Fransisco, California: Jossey & Bass.

Gentelli, L. (2015). Using industry professionals in undergraduate teaching: Effects on student learning. Journal of University Teaching & Learning Practice, 12(4). Available [online] http://ro.uow.edu.au/jutlp/vol12/iss4/4

Guilland, A., Hakkarainen, A., Heinonen, J., & Harmoinen, P. (2013). Group Assignments Require Specific Assessment Tools. ICERI2013 Proceedings, 7133-7139. Available [online] http://library.iated.org/publications/ICERI2013.

Guilland, A., Harmoinen, P. & Saloranta, A. (2014). Challenges of team work assessment in HEI. EDULEARN14 Proceedings, pp. 1850-1858. Avilable [online] http://library.iated.org/publications/EDULEARN14.

Higgins, D. & Elliot, C.(2011). Learning to make sense: what works in entrepreneurial education? Journal of European Industrial Training 35(4), pp. 345-367.

Hung, W., Jonassen, D.H., & Liu, R. (2008). Problem-based learning. In J.M. Spector, J. G. van Merrienboer, M.D., Merrill, & M. Driscoll (Eds.), Handbook of research on educational communications and technology, 3rd Ed. (pp. 485-506). New York: Lawrence Erlbaum Associates.

Jonassen, D. (2011). Supporting Problem Solving in PBL. Interdisciplinary Journal of Problem-Based Learning 5(2), pp. 95-119. Available at: http://dx.doi.org/10.7771/1541-5015.1256.

Kallioinen, O. (2011). Transformative Teaching and Learning by Developing. Journal of Career and Technical Education 26(2). Available [online] http://scholar.lib.vt.edu/ejournals/JCTE/v26n2/kallioinen.html.

Ketz de Vries, M. (2006). The leadership mystique. Leading behavior in the human enterprise. 2nd edition. UK: Pearson Education Limited.

McLoughlin, C & Luca, J. (2002). A learner-centred approach to developing team skills through web-based learning and assessment. The British Journal of Educational Technology, vol. 33, no. 5, pp. 571-582. Available [online] http://dx.doi.org/10.1111/1467-8535.00292

McKinney, D. and Denton, L. F. (2005). Affective assessment of team skills in agile CS1 labs: the good, the bad, and the ugly. In Proceedings of the 36th SIGCSE Technical Symposium on Computer Science Education (St. Louis, Missouri, USA, February 23 - 27, 2005). SIGCSE '05. ACM, New York, NY, 465-469. Available [online]http://doi.acm.org/10.1145/1047344.1047494

OECD. (2011). Skills for Innovation and Research, OECD Publishing. Available [online] http://dx.doi.org/10.1787/9789264097490-en.

Pfeffer, J. & Fong, C.T.(2002).The end of the business school? Less success than meets the eye. Academy of Management Learning and Education 1(1), pp. 78-95.

Pirinen, R. & Rajamäki, J.(2008). Further derivative dimensions of learning can be identified namely individual's learning; community's learning and building new know-how. WSEAS Transactions on Advance in Engineering Education 9(7), pp 624-634.

Raij, K. (2015). Learning and Developing in Higher Education. In Raij,K.(Ed.) Learning by Developing Action Model. Espoo: Granö Oy, Laurea Publications 36.

Spencer, L. & Spencer, S. (1993). Competence at Work: Models for Superior Performance, New York: John Wiley & Sons.

Soetanto, R., Childs, M., Poh, P., Austin, S. & Hao, J.(2012). Global Multidisciplinary Learning in Construction Education / CED 14(3), December 2012 (Special Edition), pp. 173–181.

Rienties, B., Grohnert, T., Kommers, P., Niemantsverdriet, J. & Nijhuis, J.(2011). Academic and Social Integration of International and Local Students at Five Business Schools, a Cross-Institutional Comparison. Van den Bossche, P., Gijselaers, W.H. & Milter, R.G (Ed). Advances in Business Education and Training 3. Building Learning Experiences in a Changing World. London: Springer, p.124.

Wilson-Medhurst, S. (2008). Towards Sustainable Activity Led Learning Innovations in Teaching, Learning and Assessment. Proceedings of the International Conference on Innovation, Good Practice and Research in Engineering Education EE2008, Loughborough University, UK, July. Available [online] http://www.engsc.ac.uk/downloads/scholarart/ee2008/p008-wilson-medhurst.pdf

Electronic sources:

Activity Led Learning. http://www.coventry.ac.uk/research-bank/research-archive/higher-education/activity-led-learning/definition/. Read 10.6.2015.

Figures

Figure 1: Functional and social learning relationships affecting entrepreneurial education
Figure 2: Learning by Developing (LbD)
Figure 3: Factors that promote learning in the LbD model
Figure 4: A model of virtual collaborative learning
Figure 5: Different influences on virtual teamwork
Figure 6: Educational process – Teacher and student involvement in teaching and learning theory and practice

Appendix 1: Collation of the answers to the baseline study part 01-A3

Q1: How students are taught within your organization?

A1: Lectures, tutorials (subject-based, group project and personal tutor), laboratory and practical classes, seminars, design studio classes. Supported by on-line activities, quizzes. A combination of lecture, tutorial, workshop and project (activity led learning) in group or individual.

A2: We have different forms of education, but in the bachelor there is a commissioner with a real life assignment, that students can work on in groups. They are supported on the content with lectures and knowledge clips. There is also a digital learning environment available where people can find information and ask questions on a forum. Then they have a coach during 7 weeks, who guides them through the process.
Mainly via a project-centered approach
Within our bachelor study programme practice oriented and project based learning is key. This means that students predominantly work in project groups in which they need to tackle a professional related problem often provided by a commissioner. By doing so they need to demonstrate they are able to apply a certain competency (e.g. marketing, project management, Imagineering etc.) Simultaneously with the project students are taught theory which they need to apply in the project and which is assessed in a written exam. Since our cohorts are rather big, it is not possible that commissioners provide feedback in between to each project group. What often happens is that the best groups are selected and they get a chance to present to the commissioner of which the commissioner decides which group did the best job. In our 4th year minors, students work far more closely with real life commissioners. Per project group there is one , often paying, commissioner. In that context students have a lot more contact with the commissioner during the process and it can be considered as a true collaboration.

A3: Answer collated with the answer to Q2

A4: Class lessons/lectures, including sample of exam questions
Classes are normally taught frontally. Very often the classes entail the analysis of case studies, which can either be assigned for team works or discussed during classes. Team work is required by some courses, especially for “not compulsory” or advanced courses (e.g. students in the last years). In some courses, professors guest external testimonials, such as entrepreneurs or managers from companies that discuss certain aspects of business management (e.g. internationalization; start-up; financing; etc.).

A5: In our organisation (not compulsory all over our university) teachers are strongly oriented towards professional life. Students have compulsory interim periods yearly between the sec-

ond bachelor level year and the second year of master studies. These interims are at least 8 weeks long. The purpose is to practice the learning in working world between university years.
At least two study programs in our organisation reinforce connections with working world also outside the interim, namely a master program (Management in consulting, organisation and strategy and the Higher University degree in accounting and management). Teachers of these two study programs organise meetings with working world during the university year to enable students to work on real life cases and to propose relevants solutions to companies.

A6: In our organisation teaching follows the case introduced in this questionnaire. It is based on team work and real company cases. At first the background knowledge and theoretical frameworks and tools are introduced during lectures or via independent or group learning sessions. Then the teams apply their learnings to real world cases guided by the teachers and the company representatives. In the end the final outcomes are reported, presented and evaluated.

Q2: How many hours of lecture do the students have compared to other learning activities?
A1: On the average, a student has between 18 and 12 hours of timetabled activities each week. Of these approximately 6-8 hours are lectures.
Normally 6 hours lectures vs 12 hours of other activities per week.

A2:I'm not sure, that depends on where they are in their program.
On the average: 6 hours lectures a week
For the courses I am involved I would say 10% of the total study load is lectures.

A3: lectures 15hrs/ 0,5ECTS; Seminars 30hrs/1 ECTS

A4: Overall the course is 60 class hrs. Lecture is approx. 50 hrs, the rest is exam preparation and meeting with practitioners
It depends. At BSc level corse can range from 25 to 60 hours. These hours are assigned to frontal teaching, team work in class and seminars with guest speakers

A5: Normallly students have yearly between 300 and 450 hours of face-to-face teaching. In some study programs this might be as high as 700 hours. On the whole this represents some 1500-1800 working hours for the students corresponding 60 ECTS.

A6: Normally lectures are only 5-10% of all the learning activities.

Q3: In what other ways do the students learn? For example independent exercises, team assignments, discussions, etc.?

A1: Guided study – reading, on-line activities. Coursework assessments, Group projects.
A wide range of mechanisms: tutorial exercises, online quiz, group work incl. laboratory reports, discussion and peer review of presentations, independent research and forum etc. Except examination, the key is feedback after a piece of coursework submission. Students learn from mistakes they made and the discovery of mistakes is mainly from feedback of tutors and peers.

A2: We use the mentioned forms, but also forms like: fieldtrips, placements, creative leadership assignments, facilitating creative sessions, giving presentations.
Plenary project-group sessions, individual project-group activities, individual study.
In addition to lectures we use workshops, seminars and supervised meetings which include all kinds of learning and exercises.

A3: Consultations: 15hrs/0,5ECTS; Project development 30hrs /1 ECTS

A4:Meetings with practitioners
As briefly described above, students might be required to carry out independent exercises, analyze cases, solve problems, either individually or in team. Students meet some guests during classes, to whom they can ask questions.

A5:Students may have home work, professional projects to realise. But especially they have the two months' interim at the end of the year. These interim periods serve as a basis for the interim report on bachelor level and the thesis on master level (they are actually somewhat elaborated interim reports both). These are generally highly valued in credits and may require public devending. In some cases it is compulsory to gain the average degree for the defence of the work to validate the work of the year.

A6: Students are working within teams including 4-6 participants. They have once or twice a week a meeting with their team where they discuss the situation and decide on actions. Teams have to complete exercises as milestones (idea generation, concept work etc.). They might also have independent assignments or exams during the process. In addition to this they have meetings with their teachers/mentors during the project. Teams are encouraged to seek for ideas, information and solutions in different sources (literature, contacts, benchmarking etc). Teams also prepare several presentations about their tasks during the project.

Q4: How are students assessed within your organization? Are they assessed based on an exam, a report, individual work, etc.?

A1: Exams, individual coursework and peer-moderated group coursework. Exams are mainly "unseen, closed-book" but some are "open book" and "seen question" format. Coursework is diverse – laboratory and technical reports, posters, verbal presentations, drawings, design portfolios, essays, dissertations, assessment of practical skills, tests (on-line and in class)
A wide range of assessment methods. Examination, lab report, individual and group reports, powerpoint presentations, group or individual viva (Question and answer sessions), peer assessment, etc.

A2: There is a variety: every term there is an overall exam, with 60 multiple choice questions based on a casus. Then every term there is a group report, but also an individual assessment. The group report can also be another group product like a movie. Usually there is also something of a presentation involved.
Content-wise: Individual exams, project-group reports, presentations, assignments
Process-wise: peer-evaluation, evaluation by supervisor, evaluation by commissioner
Students are assessed based on an individual exam, their team product and often an individual grade that could be based on preparation in class, peer evaluation, individual reflection or an individual oral exam.

A3: Class attendance 10%; active class participation 105; Test 20%; Project development 60%

A4:There is no standard rule. It depends how the professor organizes the teaching and the evaluation.
Generally, every course has an exam. There might be one final exam; or one (or more) intermediate exams (e.g. covering selected topics or teaching modules) plus a final one. Exams can be either written, either oral, or a combination of the two.
In courses where teaching foresees project works (individual or group), the evaluation is made both on the exam and on the project work (es. 50% of evaluation exam; 50% project work).
Students get an evaluation at the end of their academic education, expressed by a final mark. This mark summarizes the results from all the undertaken courses plus the evaluation of the final thesis.

A5: Evaluation varies in different study programs and subjects. It can be based only on the final exam but various combinations are possible

A6: They are usually assessed based on several individual and team items such as exams, assignments, reports (project plan, final report), final concepts, portfolios, presentations. As-

sessment criteria and the structure of the grade are given in the beginning of each course. Learning diaries, peer and self-evaluation are often used as well as assessment discussions and guidance sessions to steer the process.

Q5: How does company co-operation take place within your organization?

A1: Some projects (group and individual dissertation) have industry co-operation. The topic comes from industry and members of the company act as advisors and in some cases as assessors (usually formative only).

The companies are usually invited to participate via personal contact. They usually just send their representative/engineers to mentor the students, carry out assessment and/or provide feedback. In some case, the companies also provide a project (including all technical and contractual documents).

A2: Every term has a real life assignment from a commissioner from the workfield. How often: at the beginning and the end: so 2 times, where they provide the assignment, answer questions and in the end they give feedback.

For the Creative leadership assignments students have to prove that they have experience in the workfield: I'm not sure how often, this depends on the assignment, but they will give at least a briefing and feedback.

We have 2 placements: third year and fourth year: the student is there every day and is coached by the company on a daily base.

We have a minor in the fourth year where students again have a commissioner and manage the complete assignment themselves. How often: depends again on the assignment, but usually one or more every week. They work together as equals.

In 1st, 2nd and 3rd year projects. Although the commissioner is a bit more on a distance. However a commissioner is involved in providing the assignment and at the end selects the best group. In the 4th year minors it is a close collaboration. Only one project works with one, often paying, commissioner. Contact during the process is more frequent. Also in the third year work placement and 4th year thesis assignment our students work with or even in companies

A4: Practitioners hold presentations about their job, and practical cases of how course's content can be applied to real world issue

Generally speaking, the co-operation with companies takes place through:

the participation of managers and entrepreneurs to some classes held during the courses;

students' internships, either finalized to the writing of the final thesis; or to support companies in solving some issues or carrying out some tasks (e.g. preparation or update of the business plan or of the financial plan);

projects financed by companies to get some sort of consultancy on several issues, where students can be coordinated and employed by the professor who has the contact with the company.

A6: Like described in the case. Depending on the case the company may be more or less active in guidance during the process, but the minimum is shown in the diagram presented in the questionnaire.

Q6: How does the company contribute to the student's learning? How often does the company contribute to their learning?

A1: Companies define the scope of their project as well as their expectations on the solution(s). They give the initial briefing and attend final presentations for projects of 2 or 3 weeks duration 9my personal experience). In longer projects (more than 2/3 weeks) they attend tutorials about every 2/3 weeks and act as advisors.
Provide a real case with real technical document and contractual document. Allow opportunities for students to discuss with practicing engineers to learn their "language" and the way of thinking and analysis. Provide first hand of information on practical issues. In M35CAB, for a project of practically 10 week, the students will meet their industrial mentor in two occasions.

A2:This varies with each study year.
Year 1 & 2: commissioners kick-off the project with a company presentation plus an explanation of the assignment
Year 3: students go for an internship to a company
Year 4: during the minor a company functions as commissioner for a project group assignment. And during the thesis the company functions as a commissioner for an individual assignment

A3:Each month at least 2 meetings between students and ICT companies are organized. The company representatives report some innovations in the professional field and also present to the students their specific requirements for an employment.

A4: This is a hard question to answer. I have no data about how many students undertake a period of internship at a company, or how many are hired into consultancy projects. I have the feeling that an increasing number of them is interested in this opportunity, to get a work experience before finishing their studies. In some study programs, however, a period of internship is compulsory (1-3 months) and managed by the School/Department which places the students at suitable companies.

A5: In one of the two study programs students are half a week (2,5 days a week) in a company and the same lenght of time at the university. Moreover they all have the 8 weeks compulsory interim period. In other study programs the company contribution takes place through the interim.

A6: This depends on the company and its representatives. It has to be agreed before the course to make sure that the students get the information and the support they need. Usually the company presents the need or the problem with limitations and gives feedback on the proposals. Intermediate communication and interest adds value to the cooperation, contacting the company is often up to students. Clients/companies contribute to the ideas and/or concepts.

Q7: How do the students help the company?

A1: Students provide possible solutions to problems, and range of creative ideas, fresh insights, that the company can use as a basis for development.
Students do not directly help the company.

A2: By giving them new perspectives, recommendations, facilitating creative sessions, doing research, helping them with operational issues and so on.
by designing, executing and reporting applied research and translating the research findings into an advisory report and/or implementation plan
They provide ideas, new ways to existing problems. In case of a third year placement and minor they also often implement their ideas in real life. The commissioners really like to work with students since they are often provided with new fresh ideas and relevant data.

A3: The students provide their professional practice in ICT companies without payment.

A4: Not relevant in my course. In other courses, students normally support companies in daily activities in the engineering or accounting area, or help in the development of projects like the launch of a new product or the study of the costs for certain activities, etc.
Students support companies in solving some issues or carrying out some tasks (e.g. preparation or update of the business plan or of the financial plan). In the way round, companies guest students to allow them studying a practical context to write their final thesis, and to give them a practical job experience.

A5: The student/trainee takes over some tasks in the company. These are agreed upon with the university. Aside from this, the student/trainee is a member of the company staff.

A6: Students create new product or service concepts to the client's new or existing customers and make plans for them.
The topic of cooperation is chosen together by the company and the student team. It is usually a topical subject to the company and the students may provide the company with new ideas, background information and an outside view. Typically students help the company by providing latest information, using new tools and methods or collecting valuable information among customers or employees. Students generally propose improvements or plan new concepts.

Q8: What is the main goal of the company co-operating?
A1: Exposure of the "real world" to the students.
The company wants to contribute to better training of the next generation of engineers, make sure the "good" students stay on to continue their career in Civil Engineering and enhance the company's reputation among the professional.

A2: Learning and exchanging knowledge. Better connection with the industry. Involvement, engagement, empowerment.
motivating students by giving them real-life assignments/challenges
We teach the future professional, so practice based learning is an important aspect of our institute's educational vision

A3: The main goal is to inform the students about the company's requirements (required knowledge, skills and competences). Also the learning process and the syllabuses are aimed to be improved and synchronized according the labor market needs.

A4: Get the students more familiar with practical supply chain issues and applications

A5: For the students the main goal is professional integration into working life.

A6: The client/company gets new and fresh ideas and the students can have an experience of practical development process, which also includes customer aspect and viewpoints.
Students gain real work experience and attitude as well as networks.

Q9: How do you ensure that students learn the skills that are presented in the course while they participate in the company co-operation?
A1: Assessment of the project outcome/artifact.
By providing adequate supports in skill development, motivate with a proportion of module mark and practical contents of the project work.

A2: They always have a supervisor and are partly assessed on applying their knowledge. The assessment forms are very clear about that.
the learning objectives are stated prior to the selection of the assignments/commissioners so that matching assignments/commissioners are brought in
We have clearly defined out competencies (see competency profile). Those competency descriptions are used in the assessment

A3: Every student provides his professional practice in a given ICT company. He/she has a mentor in the company, who monitors his/her development.

A4:Contents of company's presentations can be part of their exam
It depends. If students participate in the company co-operation while they are writing the thesis, professors can check which skills they do acquire. We also receive an evaluation from the company about the skills and competences of the student while in training. In case where the participation to company activities is on a more informal basis, it is difficult to get a formal evaluation of students' learning.

A5: The tutor teacher visits the company during the interim period to make sure that the given tasks correspond the learning objectives. Moreover, the teacher responsible for the final interim report supervises the student and assures the adequacy of the given tasks.

A6: Students do the practical development work for the customer and they learn how to involve the learned theory into practice.
Before the course : careful planning of the project and the assignment as well as discussions with partners.
Throughout the learning process: guidance and assessment meetings.

Q10: How are the students evaluated when participating in a company co-operation project?
A1: Poster presentation to the company and academic. A formative assessment in my experience.
They are evaluated throughout the execution of the project, not just the final submission.

A2:Content-wise: the output (research report, advisory report, presentation) is assessed.
Process-wise: peer-evaluation, evaluation by supervisor, evaluation by commissioner

A3: The mentor from the company evaluates the student and after that the student presents his work to the university tutor, who makes the final assessment

A4:Not relevant for my course. In general I am not aware of a formal evaluation about the student participation and performance in the company, even if there is an assessment carried out by the company (and by the student) at the end of the training in the company.
We also receive an evaluation from the company about the skills and competences of the student while in training. In case where the participation to company activities is on a more informal basis, it is difficult to get a formal evaluation of students' learning.

A5:The university tutors evaluate the students. Moreover, the final report/thesis is evaluated by the university jury.

A6: Students make a self-evaluation report, peer-to-peer evaluation within the team moreover there is an evaluation of the student work made by the client and the teacher.

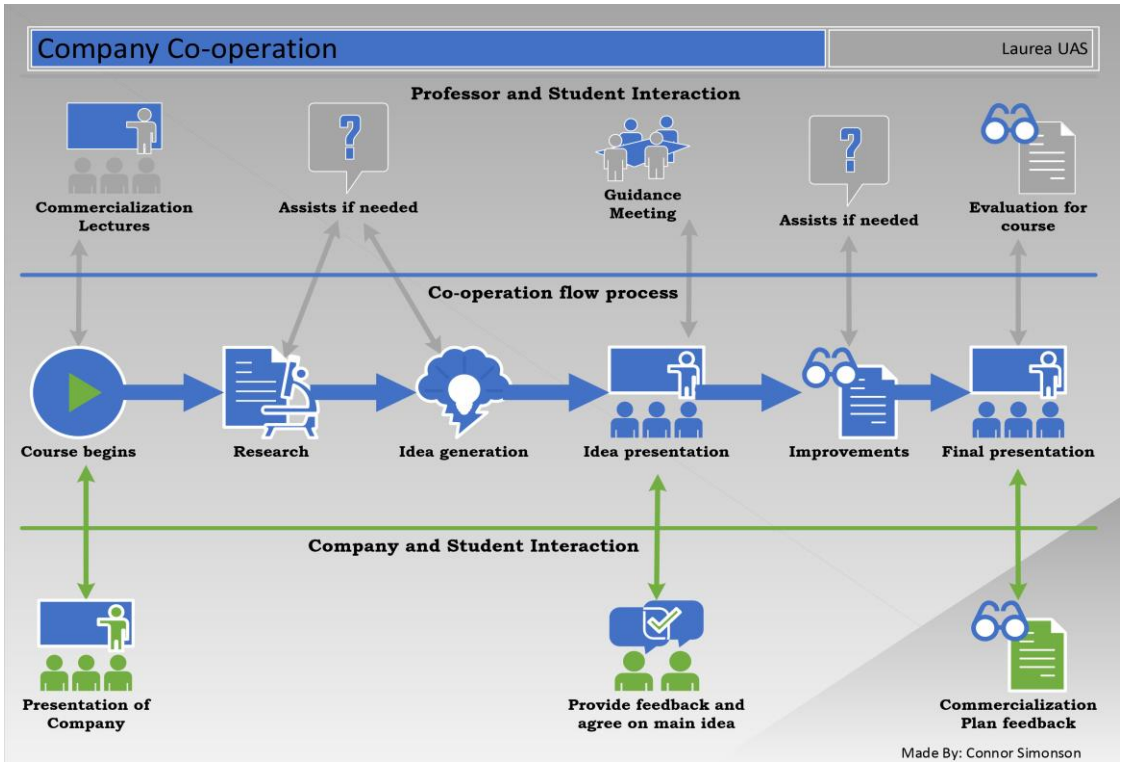
Appendix 2 : Questionnaire

Please read the following questions and ponder them as you read the following case. Once you have read the case proceed to the Questions section, thank you!

1. How are students taught within your organization?
2. How are company co-operations conducted within your school?
3. How do the students help the company?
4. How are the students evaluated when participating in a company co-operation project?

A student from Laurea tells about his teaching and learning experiences: “Rather than having normal lectures we have project work that focuses on solving real-life problems. The following description is based on a company co-operation from my perspective, as a Laurea Business Management student.

During my first year, Laurea arranged a company co-operation for a course about commercialization of products and services. We as student were able to apply the theories we had been learning about and the company benefitted as well. Even the teacher was excited because we as students were motivated! To better show how the co-operation happened, I have included a diagram.”



Beginning: “As the course started we were taught the basics of commercialization and after a few weeks the company representative presented the company and our task to us. After we received the task we formed teams and completed team building activities. We also defined

our project goals, set the milestones, divided the tasks and discussed our roles within the group before starting the actual research."

Research: "As individual groups we conducted background research and analysis of the company. This research was put together in a short report and our professor provided feedback."

Idea generation: "We also completed brainstorming as individual groups. Doing these tasks as individual groups helped us generate different ideas and improved our learning experience because we all needed to apply the theory in practice. During our contact lessons during the idea generation phase we were taught new techniques to generate ideas and also more about commercialization."

Idea presentation: "Upon completing the idea generation we presented our ideas to our classmates and professor using PowerPoint presentations and then sent the presentations to the company representative as to gain feedback".

Improvements: "After receiving feedback from our professor and the company we made modifications to our ideas and finalized the commercialization plan".

Final presentation: "Once our commercialization plan was finalized we sent it to the contact person, our professor, and our opponent team so that they could review it beforehand. Then we presented our commercialization plan and answered any questions that came up. Having opponent teams was a great idea because it helped us learn more and the company gained more insights on how to apply the plans that were presented". (Laurea's student, 2015)

Questions:

1. Could you please explain how students are taught within your organization?
    a. How many hours of lecture do they have compared to other activities?
    b. In what other ways do the students learn? For example independent exercises, team assignments, discussions, etc.?
    c. How are students assessed within your organization? Are they assessed based on an exam, a report, individual work, etc.?

2. How does company co-operation take place within your organization?
    a. How does the company contribute to the student's learning? How **often** does the company contribute to their learning?
    b. How do the students help the company?
    c. What is the main goal for co-operating?
    d. How do you ensure that students learn the skills that are presented in the course?
    e. How are the students evaluated when participating in a company co-operation project?

Please note: The company name has been omitted as to respect its privacy.