



Virtual connections in FUAS –
creating the concept for a module including a
work-related project

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Sari Suomalainen

Lahti University of Applied Sciences

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creating the concept for a module
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ABSTRACT

The aim of thesis study was to plan a concept for a FUAS (Federation of Universities of Applied Sciences) study module utilizing virtual learning and to enable work-life partners' inclusion into project of the module by using virtual connections.

The pedagogical approach of the module was planned on the basis of several pedagogical and e-learning theories. Virtuality enables collaborative working, which is an essential factor in innovations and in reflection and self-growth processes. Virtuality in project working does not mean working according to your own timetables, but asynchronous stages enable certain margins. Virtuality can be promoted in terms of decreasing the Carbon Footprint and diminishing physical learning environments, which is a challenge also in the new LUAS (Lahti University of Applied Sciences) campuses. When they can be reduced, impact on climate change and sustainability can also be achieved.

The Delphi Technique was used to study the future visions of FUAS in terms of virtual techniques and systems used in FUAS. The Delphi technique included an interview and it was implemented by using virtual techniques.

It is important to know what FUAS systems promote common working methods, provide user support and can be used by a third party in terms of work-related projects. The quality of a co-operation is also built upon these factors. Additionally, a draft guide leaflet was made for virtual co-operation with a work-life representative.

Key words: virtual learning, digitalization, e-learning, collaborative learning

Lahden ammattikorkeakoulu

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Kevät 2015

TIIVISTELMÄ

Tämän opinnäytetyön tavoitteena oli suunnitella FUAS (Federation of Universities of Applied Sciences) moduuli siten, että opetuksessa ja oppimisessa voidaan hyödyntää virtuaalisuutta. Tavoitteena oli myös tehdä toteutus, jossa työelämän edustajat voivat olla mukana virtuaalisesti moduulissa toteutettavan projektin osalta.

Pedagoginen suunnittelu perustui teorioiden, joilla on merkitystä projektiluonteisen oppimisen ja virtuaalisuuden näkökulmista. Virtuaaliset oppimismenetelmät mahdollistavat yhteistoiminnallisen oppimisen, joka on merkittävä tekijä uuden tiedon ja innovaatioiden luomisessa. Itsekasvun prosessiin johtava yhteistoiminnallinen työskentely on merkityksellinen lisäksi itsearvioinnissa ja reflektoinissa. Virtuaalisuus ja etäopiskelu eivät kuitenkaan tarkoita, että toiminta on täysin ajasta ja paikasta riippumatonta, vaan on huomattava projektiin liittyvät synkronissa ja ei-synkronissa olevat toiminnot. Virtuaalisuutta on kuitenkin tarpeellista edistää myös hiilijalanjäljen pienentämiseksi sekä harkittaessa fyysisten tilojen rakentamista ja käyttöä, mikä on myös Lahden ammattikorkeakoulun ja rakennettavien uusien kampusalueiden haasteena.

Tässä työssä selvitettiin Delfoi- menetelmän avulla FUAS:iissa käytettäviä virtuaalisia systeemejä sekä kartoitettiin tulevaisuuden visioita virtuaalisuudesta, myös kolmannen tahon yhteistyön näkökulmasta. Delfoi- tutkimus toteutettiin käyttämällä virtuaalista tekniikkaa.

Lähtökohtana moduulisuunnittelussa oli, että yhteistyössä käytetään FUAS:in tarjoamaa tekniikkaa, jolle on saatavana käyttötukea. Toimiva tekniikka on osaltaan myös laadunhallintaa, joka ilmentää koulutuksen ja sen yhteistyön kokonaiskuvaa. Työn tuloksena syntyi myös opasihio virtuaalisen yhteistyön välineiden sopimiseksi projekteissa työelämän edustajan kanssa.

Asiasanat: virtuaalinen oppiminen, etäopiskelu, digitaalisuus, yhteistoiminnallinen oppiminen

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1 INTRODUCTION

Virtuality and e-learning are increasing in education. This trend is regulated by the Ministry of Education. Virtuality and e-learning are influencing and will influence educational systems, the pedagogical approach and number of classrooms in the future. Virtuality and e-learning will be utilized more and more by the generation which has integrated mobile devices into their everyday life.

Virtuality can also be discussed from the viewpoint of climate change. Several procedures of education or work-related projects can be implemented by using virtual techniques. Virtual meetings are used, but also other operations are implemented by utilizing virtual systems. The connection to climate change is through energy consumption and carbon footprint. In a larger scale it can be seen in terms of sustainable development.

Federation of Universities of Applied Sciences (FUAS) has launched a virtual campus concept for FUAS. Virtuality should also be used in all educational units in FUAS. Lahti University of Applied Sciences (LUAS) has been developing the iemi campus and considered virtuality in many projects. Several Theses have been started to contribute to that goal. The FUAS module a Traffic and Land Use Planning is a cross-cutting study unit which will be led by LUAS.

The aim of this study is to create a concept to integrate work-related partners to this module and to distribute a concept to be used in other work-related projects. Furthermore, the aim is to determine the virtual techniques to be utilized in this module.

Virtual techniques and systems are changing fast. The concept created in this Thesis aims to make visible one system which can be developed. The base for the concept are the virtual systems recommended by FUAS and future scenes forecast by experts in FUAS. The research was carried out by using Delphi Technique which enables future mapping.

2 FEDERATION OF UNIVERSITIES OF APPLIED SCIENCES (FUAS) AND VIRTUAL CAMPUS

Three universities of applied sciences form the Federation of Universities of Applied Sciences FUAS. They are Lahti UAS, Häme UAS and Laurea UAS. The Finnish Government gave a statement on March 10th 2011 that institutions of higher education in the Helsinki Metropolitan Area should strengthen the co-operation and streamline their operation. The institution consists of 21 000 students (15% of Finland's UAS students). There are around 1700 staff members. (FUAS 2013c).

2.1 FUAS strategy

The FUAS strategy has been constituted for the years 2011-2015 and it is presently being reviewed. The federation will be seen as a collaborative field combining the know-how and research of the three universities. The students benefit from the large volumes in terms of studies and courses, and the owners benefit from the possibilities of the larger base in terms of both international and national projects and financing. Benefits for the FUAS area and for work-life are innovation and development, as well as educated, international experts ready for labour market (FUAS 2013a).

The requirement to consider operational models in different sectors can be seen as a global task. Climate change and other actual changes in the world have led to co-operation programs aiming at sustainability. The EU as a development partner of Finland has created the frames and the country specific recommendations (CSRs) for economic growth in the strategy for 2020 (EU 2013). Mobility of the youth, innovations, resource, effectiveness, development of information society, development of industry, education and diminishing poverty are the seven main initiatives (FUAS 2013a). The FUAS will focus on the globally essential tasks. (FUAS 2013b).

The integration of research and development (R&D) into learning is one of the most important tasks in the strategy. The pedagogy and learning environments will be developed according to the strategy (FUAS 2013b). The aim is to create work-related pedagogical solutions (FUAS 2013d).

FUAS is formed from the local campus areas which are situated in the Greater Helsinki Metropolitan Area. The response to the global challenges will be integrated in education and research. One of the main targets is technology development including e-learning, e-working and a virtual campus. (FUAS 2013b).

The strategy of FUAS (2013) states:

“The strategic intent of FUAS for 2020 is an internationally respected federation of independent higher education institutes that strengthens the international competitiveness of the Helsinki metropolitan area, offering all the higher education, research and regional development functions required by the metropolitan area’s industry, commerce and population.”

2.1.1 Research and development in FUAS

Research and development (R&D) has been a target activity since University of Applied Science Act 2003 (2003/351). FUAS strives for an international network and R&D activities. According to the work group for evaluation targets of FUAS 2013, it has good prospect to get 2020 European funding (FUAS 2013c).

When R&D is integrated into learning, it will provide student with professional experience during the studies. Projects related to innovation and to entrepreneurship are suitable for integration. Another way is of getting advantage of R&D is to involve staff in projects and get updated teaching and knowledge out of it. This would demand implementation of special research or doctoral programmes (FUAS 2013c).

More than 170 qualified researchers work in FUAS. The RDI volume is 16% of the total volume of Finnish universities of applied sciences. European 2020 strategy counts on regional collaboration between science, industry and the public in terms of funding research and development (FUAS 2013c).

The FUAS R&D is applied research. It is practical, experimental doing and innovations, the role being a network operator between research universities and universities of applied sciences, vocational schools, business communities and public corporations (FUAS 2013c). The membership in European Living Lab

(ENoLL) enables innovations, when using interaction, knowledge sharing and collective intelligence among participants worldwide (Livinglabs 2014).

2.2 FUAS virtual campus

The aim of the virtual campus is to combine physical, virtual and social learning environments. It will be created for students, teachers and other stakeholders in R&D. The operational plan for the FUAS virtual campus has been created for the years 2013-2015. The holistic learning environment includes spatial planning in terms of diminishing the need of classrooms (HAMK 2013a). The implementation plan of 2014 specifies the proceedings and responsibilities. The concept of the FUAS virtual campus will be created and it will include pilot courses from each stream sector (HAMK 2013a). Altogether the virtual campus is seen as a flexible learning environment enabling individual learning and producing various services for all users (Figure 1) (Kuusela 2013).

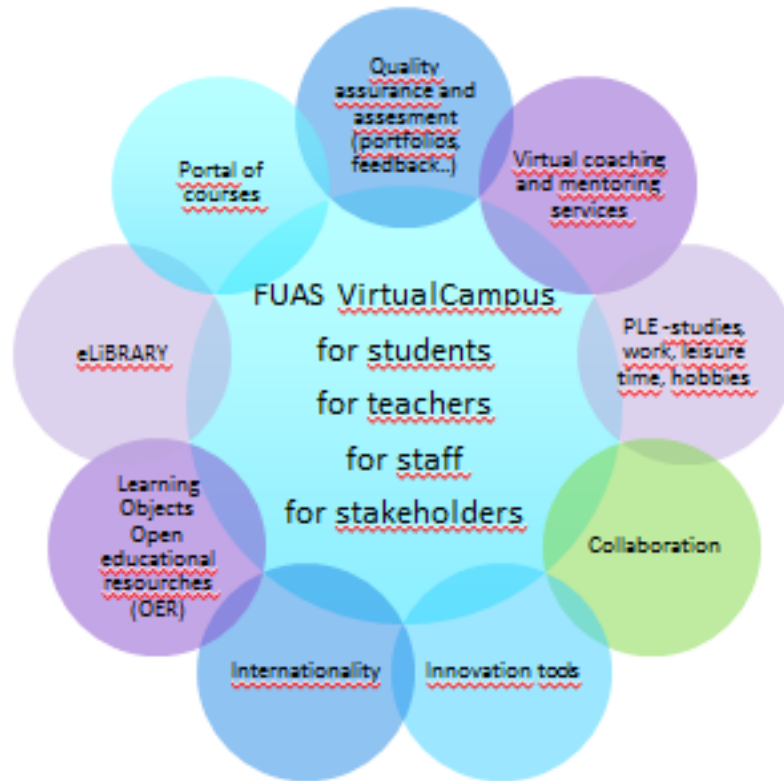


Figure 1. The structure of the virtual learning (Kuusela 2012).

2.2.1 Virtual learning in a FUAS cloud

Virtual learning means an Internetbased learning environment which connects teachers and students by using computers and mobile devices. Virtual learning can be independent of time and place.

The Ministry of Education finances both Virtual University of Applied Sciences and Virtual University in Finland. The Ministry of Education promotes the use of digital learning environments and development of communication technology skills from pre-school to professional studies. They are promoted as a part of a lifelong learning process. Digital technology itself develops communication technology skills and furthermore enables learning and teaching methods which will respond to the challenges of changing work-life requiring comprehensive knowledge, interaction and co-operation. (Ministry of Education 2013.)

Virtual learning includes a social network, which means that it is not only a question about technology. Social media in education falls behind social media used in

freetime. It is the social network that enables people to share information and create common meanings. In other words, it is communal information built and developed together. Furthermore communal learning in interaction activates individual comprehension (Pönkä 2012).

Virtual learning can use different actions and it can combine them as a star model (Figure 2), when in previous e-learning models all material was delivered and saved in the same system, but not used or developed in interaction.

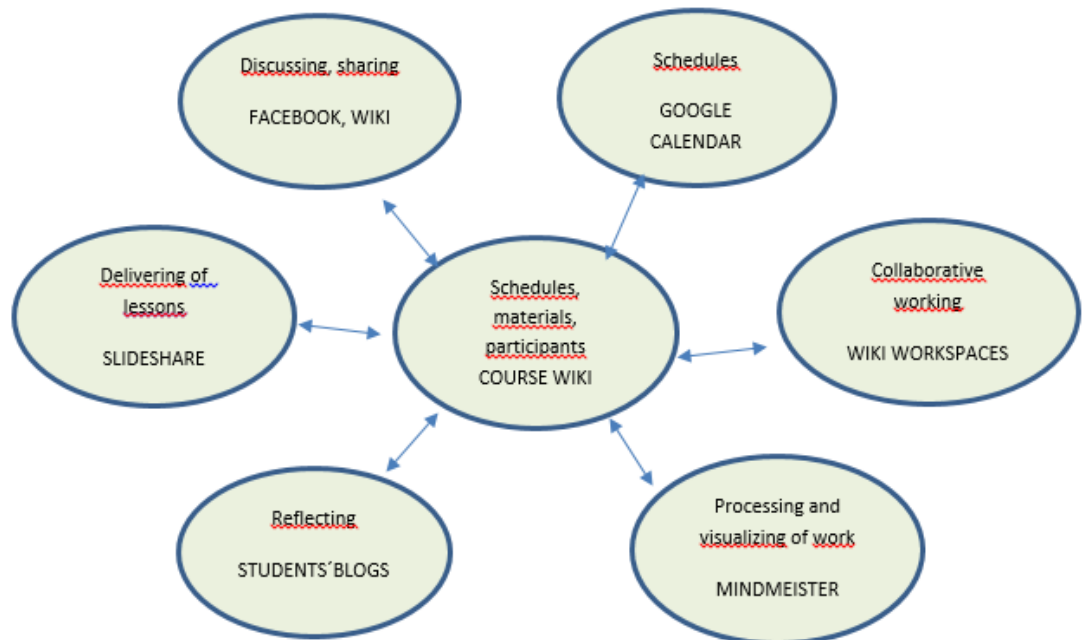


Figure 2. Development trends of virtual learning, an example of a star model (Virtuaaliopetuksen kehitystrendejä 2012, translated by S. Suomalainen 2014).

The onionmodel (Figure 3) clarifies the existing situation. The obligatory systems are the core for studying in FUAS. Most of the applications presented in an onion model are so called “free services”. Development of various techniques and

applications is quick. This onion model was been launched last year to regulate the use.

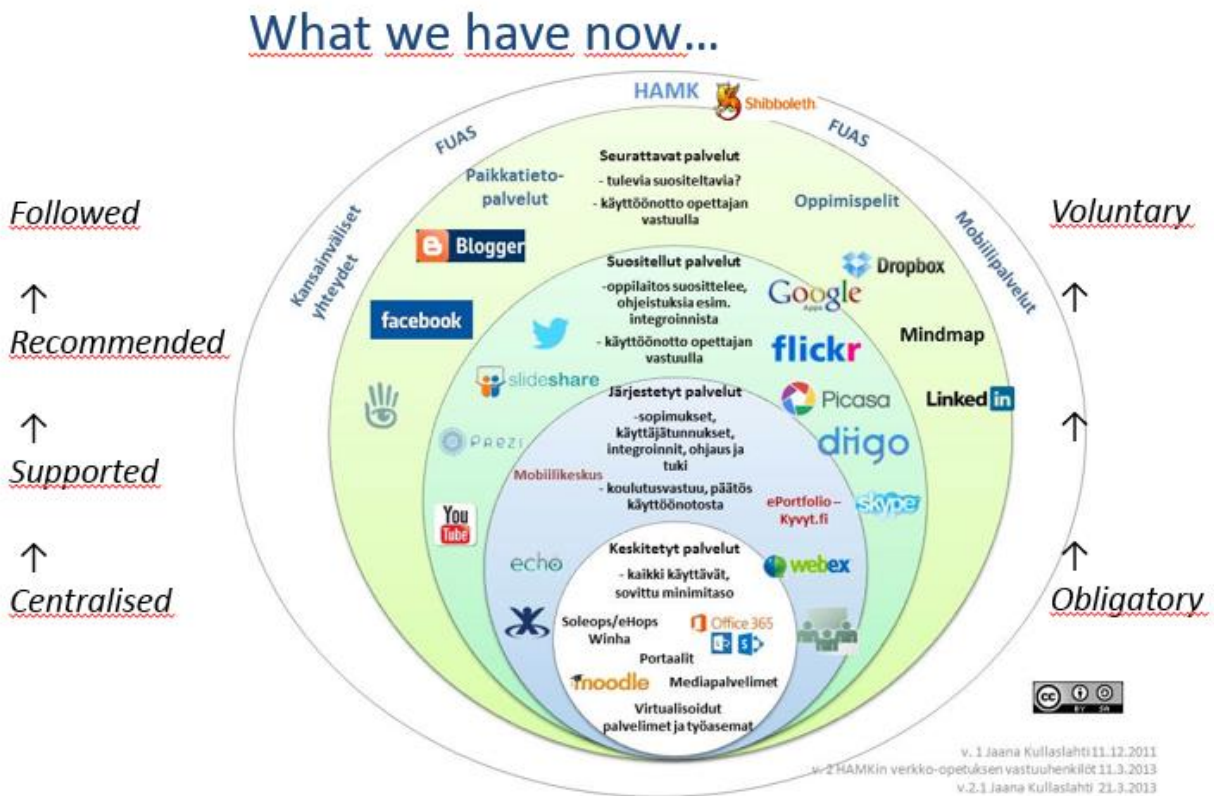


Figure 3. Onion model (Kullaslahti 2013).

2.3 Development plan of FUAS virtual campus

The FUAS virtualcampus is developed according to the development plan 2013-2015. The networking environmnet for students, teachers and other stakeholders will be created and it will be utilized by computers, laptops, tablets and mobile devices. It is not a separate system, but should be integrated with all FUAS organizations and their processes (FUAS virtual campus 2013).

The aim is to provide learning material, which will be produced according the common quality criteria. Furthermore open material, for example MOOC (Massive Open Online Course) will be used. Text and pictures will be shared via FUAS wiki and audio-visual material via the FUAS channel (Kuusela 2014). The aim is also to reduce the number of classrooms and promote flexible learning. The BYOD- project (Bring your own device) has been launched and the expectation is that students will have their own laptops to be utilized on all occasions (FUAS virtual campus 2013).

3 LAHTI UNIVERSITY OF APPLIED SCIENCES AND NIEMI CAMPUS

The Lahti University of Applied Science consist of three campus areas situated in the city of Lahti. There are 5000 students and approximately 400 staff members. The study fields are business, tourism and hospitality, design and fine arts, music and drama, social and health care and tehcnology. The LUAS goals and strategies are made visible under FUAS goals and strategies in the Figure 4. International framework and sustainable development is seen in the vision for 2017. (LUAS RDI 2013). Furthermore, LUAS defines the goals of the areas educational focus: design, environment and development of welfare services.

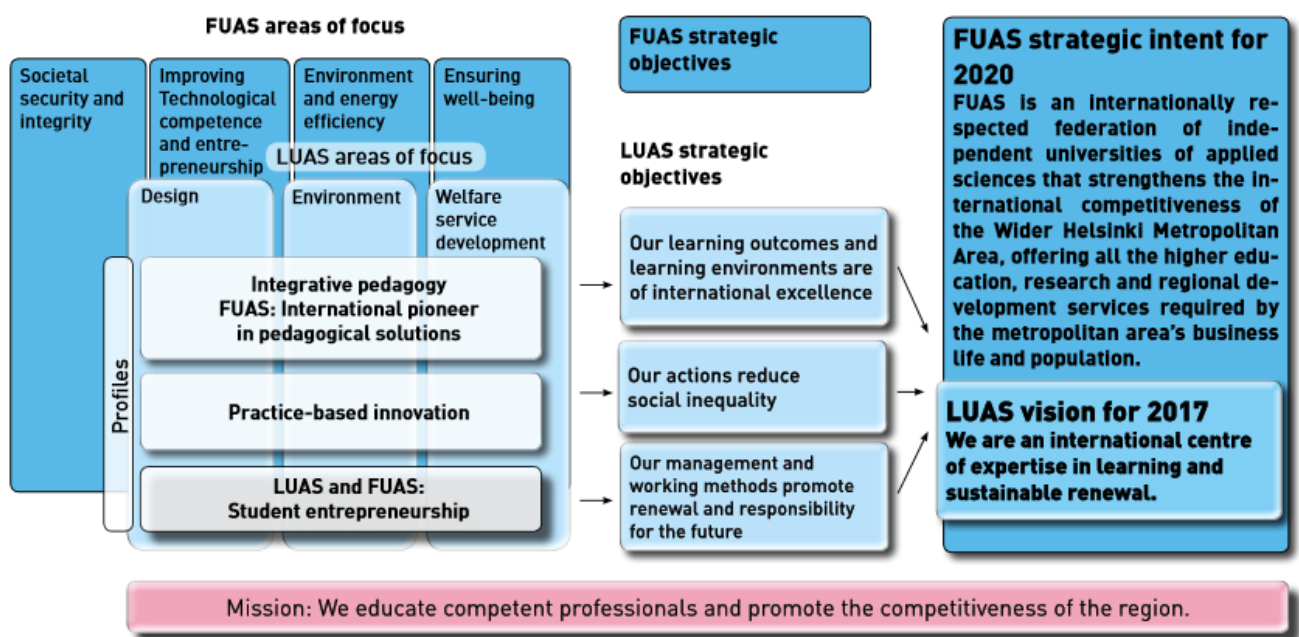


Figure 1. The strategic framework of the RDI strategy of Lahti University of Applied Sciences

Figure 4. The strategic framework of FUAS AND LUAS (LUAS RDI 2013)

The syllabus will include larger themes or phenomena which also build the content of the modules. The modules and the competence skills based on curriculums

enable flexible and new technology utilizing work-related studies, which also are expected by the work life (LAMK 2013a). The aim is to combine projects and research and development with theory studies. Learning environments will be created so that students of different study levels can work collaboratively and internationally utilizing new technology (LUAS RDI 2013).

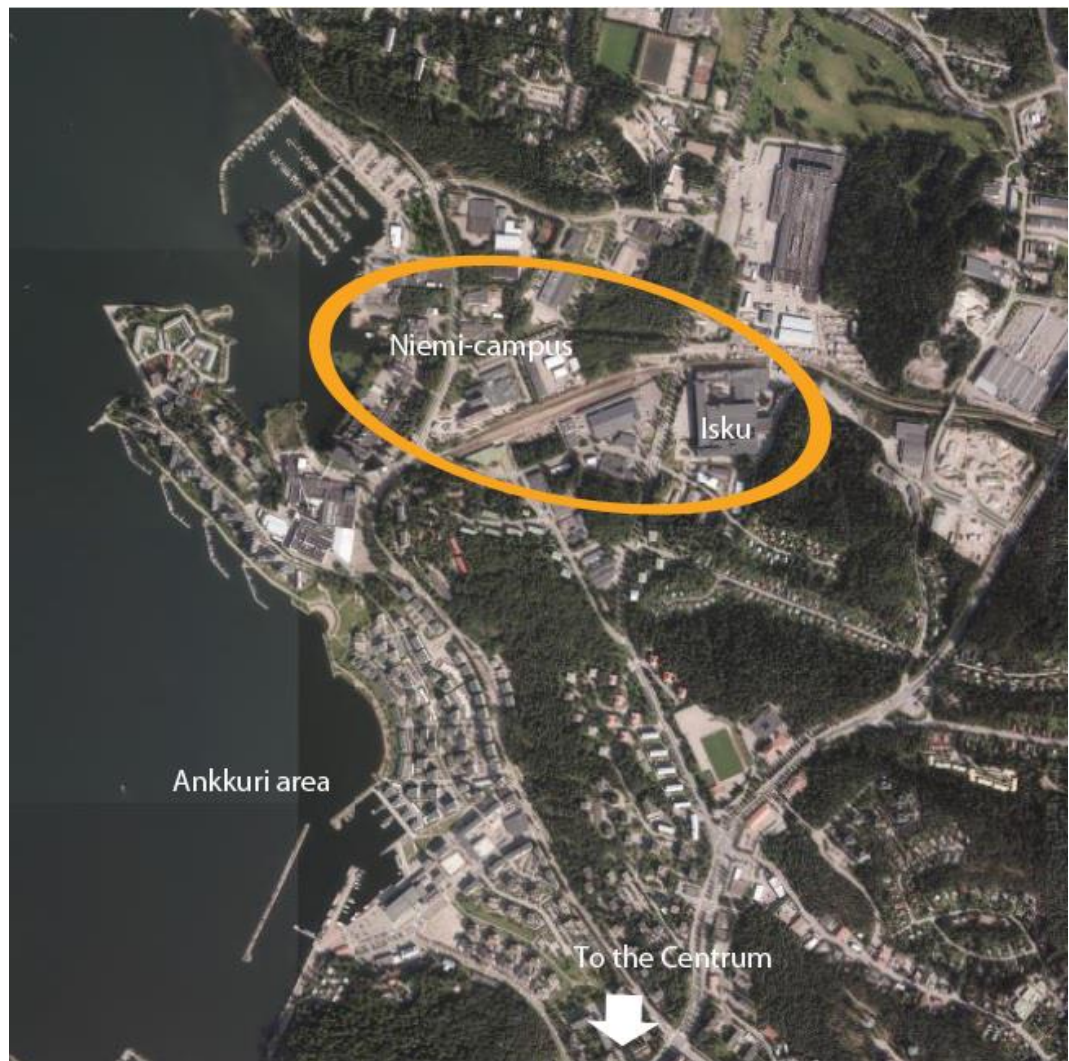
The development of LUAS campuses is part of the strategy work. Campus areas will be concentrated in the Niemi area in Lahti (Aarrevaara 2014b). A new campus has been developed in Niemi during the last few years. The aim is to combine multifunctional operations and at the same time achieve new and flexible learning environments. On the other hand, the Niemi campus is seen as a national innovation concentration. The two year development project is led by Ladec Ltd (LAMK 2013b). Ladec Ltd develops business growth prerequisites promoting competitiveness and attractiveness in the Lahti region (Ladec 2013). A new property, a former industrial building (ISKU Oy), will be reconstructed to serve educational purposes (Picture 1). Virtuality and other challenges will be considered in the development process, because the space of LUAS will be reduced into half of the current space (Aarrevaara 2014b).

The Niemi campus is already in use, even though also development projects are going on. The development process will be utilizing a usercentered approach. The campus is envisioned to be a multifunctional campus and an enterprise-oriented learning environment. It means that there will be several companies which will provide advantages and possibilities to co-operation, and more intensive interaction with companies in many new ways.

The Niemi campus already uses virtual techniques. Vesikko (2013) has introduced an environmental information laboratory for sustainable environment. The laboratory enables visualization and promotes the decision making process in various projects. The Decision Theatre was implemented in LUAS according the budget available, but reproduced one implemented in Arizona State University (Vesikko 2013).

The development of the Niemi campus also addresses the actual challenges of urban planning. The City of Lahti has made a commitment to diminish emissions and to

make the city structure more compact. Furthermore, certain actions should be concentrated and both the public traffic and connection network should be developed. The change will release space to compact the city center whereas Niemi Science Park enables energy efficient solutions by combining business, education, students, research and other stakeholders in a larger campus area. (Picture 1).



Picture 1. Niemi campus and a former industrial building (ISKU Oy) will serve as campus area.

Carbon footprint is an essential method in assessing CO₂ emissions. The carbon component is a part of the ecological footprint, which combines elements of human

demands and compares them to utilized land. The carbon footprint is increasingly growing part of the ecological footprint, now being 54% of it (Global Footprint Network 2014). The growth of carbon footprint has been compared to the earth's capacity and it is reaching the earth's biological capacity (Figure 5).

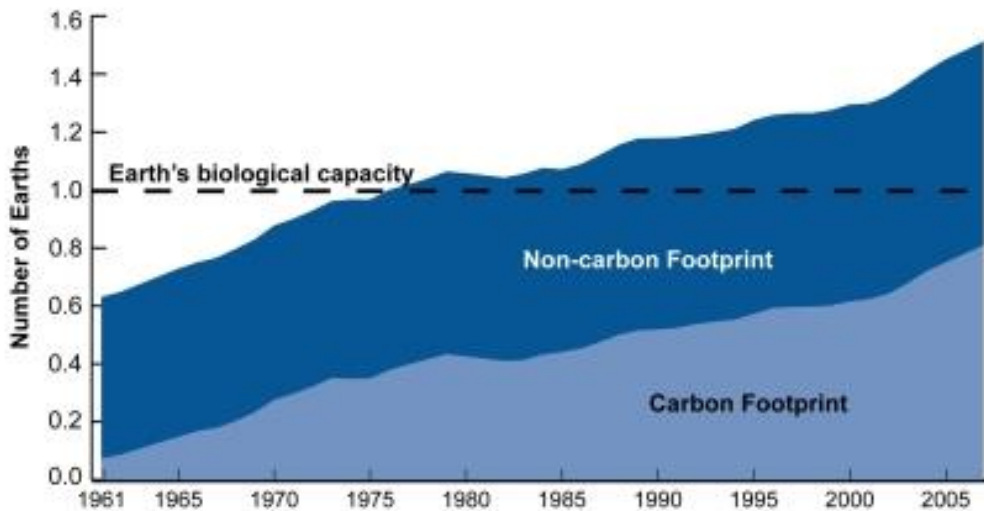


Figure 5. Carbon Footprint is growing (Global Footprint Network 2014).

Students in the Degree Programme of Sustainable Development in HUAS have calculated carbon footprint in terms of several profiles. One profile refers to cases when one commutes to a workplace by a vehicle or if one is a distance worker. The same calculation has been done in the context of a student commuting to a campus or utilizing distance learning. Carbon emissions in this case originate from traffic, and additionally material sources of mobile devices are estimated in terms of life cycle analysis. The results of CO₂ emissions are presented in kilograms per month in Figure 6. (Mobiiliopas 2013). The study shows diminishing produce of CO₂ in cases when distance work is included. The analysis also includes lifecycle of mobile devices and computers.

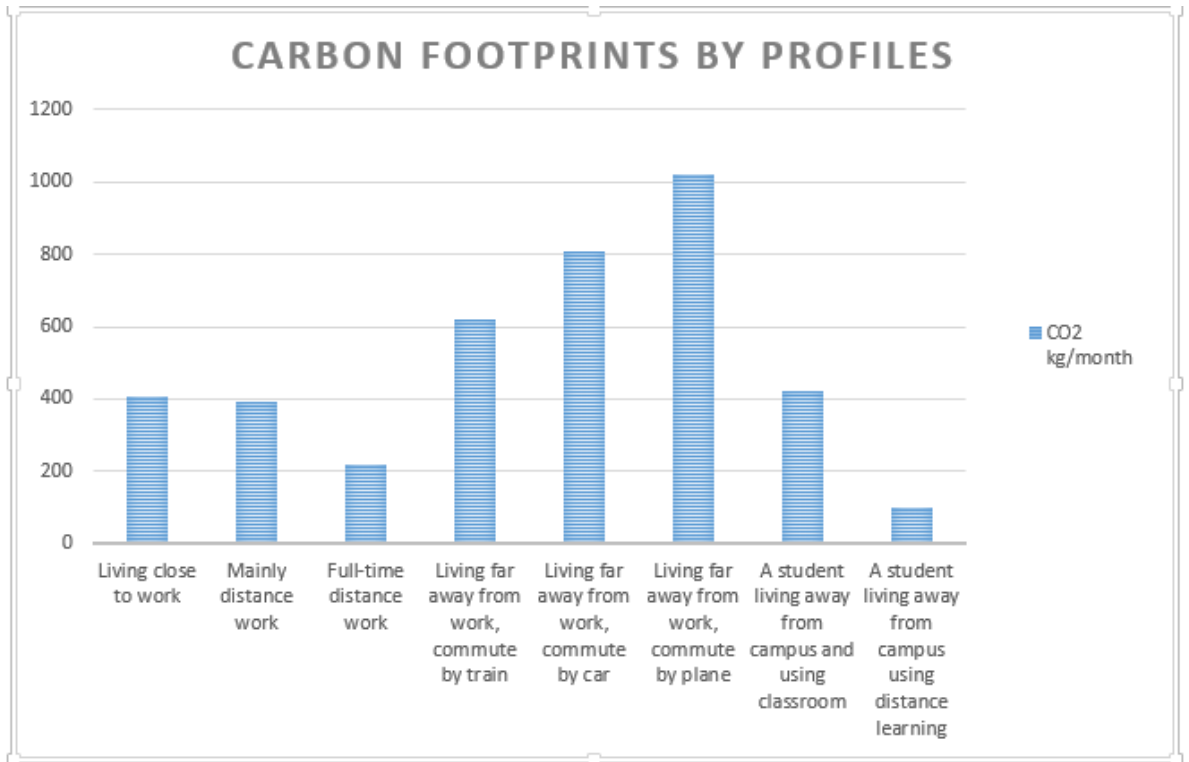


Figure 6. Carbon emissions in different cases of commuting or distance working in kg per month (Mobiiliopas 2013, translated by S. Suomalainen)

4 PEDAGOGY IN VIRTUAL LEARNING AND IN WORK- RELATED PROJECTS

Students at Bachelor's Degree achieve competences in knowledge, skills and professionalism. Pedagogical integration of research, development and innovation projects form a learning environment used by students to solve authentic work related- problems and to network (LAMK 2012).

The aim is to educate top professionals. It is a holistic personal development covering different stages during the life. A top professional is described by Isokorpi (2013, 13) as an expert who is capable of using skills and knowledge combining theory and praxis.

This all looks very easy, the situation creating a flow atmosphere.

(Isokorpi 2013)

Educating top professionals requires encouraging circumstances for students. The pedagogical focus is on strengths of students, not in weaknesses. Furthermore, learning is based on personal experiments of students, and reflection is necessary for the professional and self- growth (Isokorpi, 2013, 11). Utilizing of a group and knowledge of group members promotes creativity, interaction and welfare. Feedback is an essential tool in motivating. Especially stimulation and focusing on strengths in professional growth (Isokorpi 2013, 23).

The syllabus aims of integrating work-related projects in modules of 15 credits. It is 400 hours of work for students. Work-related projects signify that companies or public corporations are co-operation partners to FUAS. Virtual connections are important in this co-operation, because it is obvious that more and more co-operation needs quick connections, which do not release resources. This study aims to develop virtual co-operation for work-related projects.

4.1 Definition of a project

A project is approved as a development tool when a company or a procedure needs steering. A project has to have goals and the content of a project should be based on sufficient pre-documentation of the developing issue in order to set reasonable

goals. A project also needs mapping about users' needs, otherwise the results cannot be utilized. The EU membership has launched many large projects, also in terms of funding. Critique and feedback of those projects have steered the actual project contents. (Silfverberg 2009.)

The target of the project is based on the requirements of the change. In other words the targets should describe the change in advance. A project organization and realistic schedules are needed and resources should be drawn on the basis of the needs of the project organization. (Silfverberg 2009.)

A project should learn from itself. It means that it is not reasonable to follow the project plan if it is apparent that the planned steps will not lead towards results which can be applied. (Silfverberg 2009.)

When planning a pedagogical approach, a project includes the same elements. A project will produce know-how and information through an organized method in which several experts use reflection to reach common understanding and useful results. Furthermore, general management processes are necessary when project learning is planned and a work-related project adapted. (Vesterinen 2003, 4). General management processes need a schedule for the project and time estimation for each milestone (Picture 2).

Projekti aikataulu

	5 26.01.	6 02.02.	7 09.02.	8 16.02.	9 23.02.	10 01.03.	11 08.03.	12 15.03.	13 22.03.	14 29.03.	15 05.04.	16 12.04.	17 19.04.	18 26.04.	19 03.05.	20 10.05.	21 17.05.	22 24.05.		
Tehtävät ja vastualueet																				
Antti (käyttötöitä, testaus)				P		S				P				P	S			S		S
Lauri (ohjelmointi, SQL)		S				P		S			P				P					S
Salla (dokumentointi)			S							S					P					S
Sami (projektipäällikkö)		P	P		S					P	S			S	P		S			P
Vaiheet ja tehtäväalueet																				
Määrittely																				
Käiki-projektiin tutustuminen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Korppiin tutustuminen	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Tilannekartoitus																				
Vaatusuunnittelu																				
Suunnittelu																				
JSP-tutustuminen				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Käyttötöiden suunnittelu																				
Tietokantasuunnittelu																				
Tietorakenteet																				
Toteutus																				
Käyttötöiden demo																				
Tietokannan muokkaaminen																				
Tutkintorakenteen kopioiminen																				
Opintosuunnitelman muokkaus																				
Kokonaisuusien muokkaus																				
Perustelujen lisäys																				
Raporttisivu																				
Testaus ja korjaukset																				
Ryhmän testaus						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tilaaajan ja ohjaajien testaus																				
Viimeistely																				
Projektikansio																				
Dokumentit																				
Projekti-suunnitelma																				
Vaatusuunnittelu																				
Sovellussuunnitelma																				
Testausuunnitelma																				
Ohjelmakoodi																				
Dokumentaatio																				
Testausraportti																				
Sovellusraportti																				
Projektiraportti																				

Selitykset: ■ =toteutunut, P=puheenjohtaja, S=sihteerin, E=esittely, K=katselmointi, T=tarkastuspiste, X=aktiivinen vaihe, H=hyväksyty
 ~~=tehdään muiden ohella, *=aktiivista työskentelyä

Picture 2. Project schedule determines tasks for each milestone (Jyväskylä University 2014).

When a work-related project is launched for students, a teacher has to define the whole learning process and tasks for students in a different way than in normal teaching. A teacher will have a new role in supervising and in guiding, when substance competences are not so essential any more. The task of a teacher is to be a learning and an observing partner. However, a teacher is not a project manager and still has the duty of assessing competences and know-how of students. (Vesterinen 2003, 6)

The essential elements in project supervising are dialogue, reflection, feedback and evaluation. Reflection helps students to see progress and professional growth and due to that it helps them to adapt a new approach by utilizing experience and

developing professional skills. Teamwork utilizes personal reflection, peer reflection, teachers' reflection and team reflection. (Vesterinen 2003, 7).

Evaluation of project learning focuses on a total process, not only on the results. Students should document the process by using portfolios or learning diaries. Project learning aims to reach skills, know-how and silent knowledge elements, which are essential in various situations in work-life and the base for professional development. (Vesterinen 2003, 7-8).

Project learning combines different ways to study, such as collaborative learning, problembased learning and experiential learning. All of them aiming at social interaction and diminishing teacherdirected learning. (Vesterinen 2003, 9.)

4.2 Problem-based learning

Problem-based learning (PBL) is one way to reach the pedagogical approach. The problem creates the basis for the content of the module. PBL is not necessarily in connection with work-life, but work-life is imitated. Generally students work as a team and they are managed by an authority (Boud&Feletti 1999, 16-20). Theoretical knowledge is not sufficient for work-life, which is constantly undergoing by fast changes. Changes can be economical, political, scientific, tehnological and all others, which continually take place in the world. Adaptation to changes is related to a learning skill of self-guidance. Both of them need communication skills, critical thinking, logical and analytical approach, decision making skills and self-assessment skills. (Engel 1999, 33-34.)

Problem-based learning allows individuals, students and teachers meet to in a learning process. It differs from the situation of a one-way process led by a teacher. It does not need a theoretical approach by a teacher, but it allows the problem to create the starting point for further progress. (Margetson 1999, 53-54). PBL is innovative, it emphasizes problem solutions, combines material from different branches of science and develops new teaching and assessment methods (Little & Sauer 1999, 105).

4.3. Blended learning

Blended learning has widened the conception of e-learning in the context of pedagogy. Vainio (2008) writes in her article about traits of blended learning (Bonk et al 2006, s. 549–567). Blended learning combines, with the help of technology and mobile devices, individual learning to community learning. It can happen both in classrooms and in virtual environments or only in virtual environments. The teacher is seen as a supervisor, but new methods and pedagogic structure are challenging and need different kinds of experts when blended learning is launched. (Vainio 2008.)

According to Nordberg, Dizuban & Moskal (2011, 211) there is a shift between synchronous and asynchronous elements of blended learning. It is necessary to understand it when planning a course. Synchronous parts are learning with deadlines, meetingtimes and other issues in community learning, whereas asynchronous steps are taken individually. Classroombased courses have been synchronous, but they have included asynchronous elements, such as reading and assignments before virtual learning times. Furthermore, asynchronous parts of the course can be supported by virtual tools, such as blogs, recorded lectures, whereas synchronous parts need less and less physical contact, but seek more and more learning interaction (Nordberg et al. 2011, 11).

4.3 Learning by doing

The concept of learning by doing emphasizes learning and forming knowledge from the base of doing things. An authentic environment or practicebased concrete situations are the base for observations and reflection. The philosophy is from educational psychologist John Dewey (1859-1952) (Pedagogical development 2014).

Learning by doing is a collaborative and joint responsibility. Appropriate scheduling promotes learning. When a teacher is a supportive supervisor, students produce observations, reflections and assessments which should be shared, discussed and negotiated. One has to relate one's own experiences and reflections

to other students' reflections and as a conclusion understand their interdependence relation (Pedagogical development 2014).

4.4 Interactive learning

Professional skills also include ability to be active and to use interaction in cooperation. Furthermore, problem solution skills are needed in working life. Jyväskylä University launched a project to promote interactive learning and in that way activate students to learn interaction and develop skills needed in the future. Furthermore, the aim was to develop new interactive teaching methods. (Jyväskylän yliopisto 2014a).

Learning has been a one-way action, which means that a teacher gives the information to students. This comprehension is now breaking, even though it does not happen as fast as would be necessary. The roles of teachers and students will change and students' own responsibility for learning will be remarkable. (Jyväskylän yliopisto 2014b). The project study showed that the number of students joined in interactive courses was bigger than in normal reference courses. Furthermore, motivation and ability to do something was better in interactive courses. The resource of other students were seen as important and better in interactive courses than in normal reference courses. (Jyväskylän yliopisto 2014a).

Interactive learning is used in many countries, but the pedagogy in Finland is still focused on the method that a student listens, makes notes and then proves knowledge in tests. When interactivity includes reflection, argumenting and commenting, it also develops skills to communicate. Dialogue is seen as a common base for interaction and mutual understanding (Jyväskylän yliopisto 2014b, Aarnio 2012).

Interaction in learning and in work-related projects can be implemented by using virtual techniques and systems. Elearningeuropa (2011) introduces several articles about virtual and e-learning techniques in connection with interactive learning. Blended Collaborative Constructive Participation (BCCP) includes six actions

implementing sociality, socio-constructivism, dialogy and scaffolding. (Elearningeuropa 2011).

Silander (2012) determines several pedagogical models for using mobile devices in learning and in authentic environments like work places, nature or in other specified contexts. Models cover studying work-processes, case learning and reflective problem solutions. The most important aspects are documentation, notation and reflection in terms of an authentic environment. (Silander 2012, p. 10-12.)

5 USE OF THE DELPHI METHOD IN EXPERT INTERVIEWS

This study aims to implement a FUAS study module integrating work-life partners virtually to it. The research question for this study is: what techniques and systems promote virtual connections with work-life partners?

The qualitative research seeks for holistic information gathered from people. Recommended methods are interviews and discursive analysis of documents and texts. The analysis will be reviewed in detail, the aim being to find out unexpected factors and phenomena. (Hirsijärvi et al. 2010, 164.)

The theme interview is a typical method for qualitative research. It is a well-structured questionnaire with open questions and a discussion. The Delphi Technique was developed by Dalkey and Helmer (1963) and it is widely used in gathering data from experts (Hsu & Sandford 2007). It does not aim to create one common understanding, but seeks new ideas and understanding for future development (Kuusi 2013, 252; Hsu & Sandford 2007). It also aims to create guidelines, which can be developed among the participants during the interview process. Several rounds and time frames should be considered when creating a Delphi study (Hsu & Sandford 2007).

To map future development of e-learning technologies and systems for this study, the Delphi Technique was considered to be sufficient for it. The first interview round was implemented by using a structured questionnaire and it was processed in the following commenting rounds. The theory determines that several panelists should be involved. They should represent their own specialization area and be interested in other sciences and fields as well. Other desired attributes are abilities to see national and international connections as well as assess problems from different aspects. Furthermore, an interest to create something new is included into strengths of a Delphi-panelist. Depending on the theme of the study, also a smaller number of panelists is acceptable. It is important to understand that the quality of panelists is more important than the quantity of them. (Kuusi 2013, 248-256).

The Delphi Technique analysis can include both qualitative and quantity data. The consensus data can be determined by using quantity analysis, whereas qualitative research is analysed by using an inductive analysis. (Hsu & Sandford 2007; Hirsijärvi et al. 2010, p 224.)

This study concerns a very rapidly changing digitalization area. The combination of the theme interview and Delphi Technique interview were chosen to find out phenomena and future signs.

The virtual development experts in FUAS organizations were interviewed in the first round. Some of them also work for HUAS. The structured interviews took place in March 2014 within two weeks and the interviews were carried out in Finnish (Appendix 1). The appointments with interviewees were scheduled beforehand and the Delphi Technique was explained to them. It was essential for them to know the aim of the study, the length of the interview and the possibility to comment the report after the interview round. The interviews were conducted by using virtual connection Lync, which enables an interviewee and an interviewer to connect virtually. Furthermore, interviews can be recorded and saved by using the same system. One recorded interview lasted 30-45 minutes and the total interview data covers 3 hours. The panelists are responsible for different sectors of education and organization development.

The panelists:

Ari Kuusio, manager of IT FUAS, HUAS

Harri Kuusela, development manager FUAS

Johanna Salmia, project manager HUAS

Risto Salminen, vice rector HUAS

Outi Vahtila, manager of education, HUAS

The interview questions:

Technological questions

1. What systems will be provided for FUAS (own systems provided/cloud services/other free services)
2. What are important factors with development of virtual learning?
3. What are important factors in terms of work-related projects?
4. Are there any innovations to be utilized in terms of virtuality?

Political questions

1. Will certain systems remain closed systems?
2. Is there a goal to develop systems in co-operation with actors outside the FUAS?

Economical questions

1. Has it been considered that cloud services or other free services will maybe not remain free?
2. What other factors will be considered in addition to costs?

Social questions

3. What criterion of systems will be considered in terms of community learning?

Ecological questions

4. Will environmental aspects be taken into account?

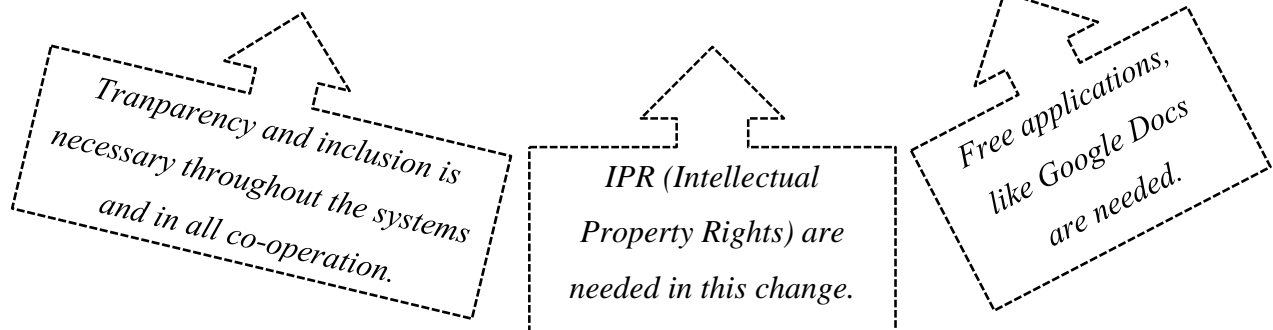
Values

5. How will the choices build the image of FUAS ?

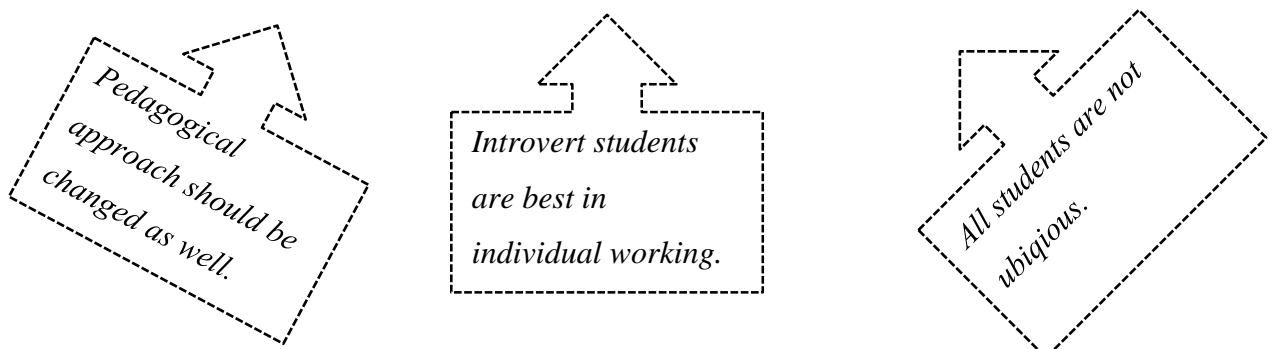
5.1 Results of the Delhi study

The interview data was onloaded as a document. The interviews were not transcribed word by word, but the main issues were written down. The report on the first round were sent to all interviewees to complete and to comment on the conceptions found. Some of the report were commented when some themes were commented, whereas some were not. Examples of the first round report can be seen below and some of the comments can be seen after that in the speech bubbles.

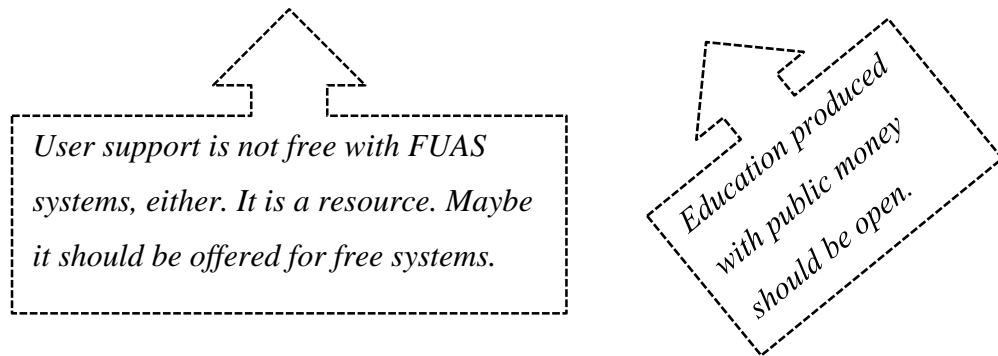
“Openness and co-operation is depended also on the third party. All interviewees were aware about learning management (closed systems), data protection and licences. The systems can be developed among universities, but with the third party they have not been developed, yet.”



“Technique and culture of learning is changing. The student is no more a client or a consumer. The collaborative learning should be enabled through the virtual systems as well in contact learning.”



“According to the FUAS strategy, systems should not be overlapping. Systems with data protection are closed systems. User support is ensured with FUAS systems, but with free systems it is not.”



Two weeks time was given for commenting. The results after that were processed using the STEEP analysis. The entire Delphi process can be seen below (Figure 7).

Interviews digitally March 2014	Unloading and writing a report
The first report to be commented April 2014	The report ready
The report to be analysed by using STEEP May 2014	The analysis ready

Figure 7. The Delphi process.

STEEP analysis structured the interview themes and aims to find out changing phenomena in the macro-environment connected to the organisation being studied

(STEEP 2014). STEEP stands for Socio-cultural forces Technological forces, Economic forces, Ecological forces and Political forces, and furthermore values in general. The analysis will create the strategy of virtual environment techniques as well as produce collaborative forecasting for possible changes, which are can be addressed in the FUAS organization.

Figure 8 shows the consensus under STEEP and defines the three phenomena where there did not seem to be consensus. The three topics were controversial and seen as future challenges. A virtual teacher as a supervisor was seen as probable in the future, but its definitions were not consistent. Virtuality will also serve individual development in the future. Virtual teachers can steer and supervise these processes. The second topic includes the discussion about new techniques and 3D output which can be discussed but it is not known when they will be adapted in FUAS virtuality. Studying and the pedagogical approach are also implemented more and more by using 3D modelling and learning through gaming. Furthermore, augmented reality and other developed solutions will be used in teaching.

The third issue is connected with transparency and inclusion. Inclusion means building social connections on line. The phenomena are known by all interviewees, but in different ways and at different levels. Transparency and information sharing are the base to connect partners and create a possibility for them to react and discover co-operation possibilities. Furthermore, inclusion is co-operational action in a social network which strengthens transparency and openness in practices.

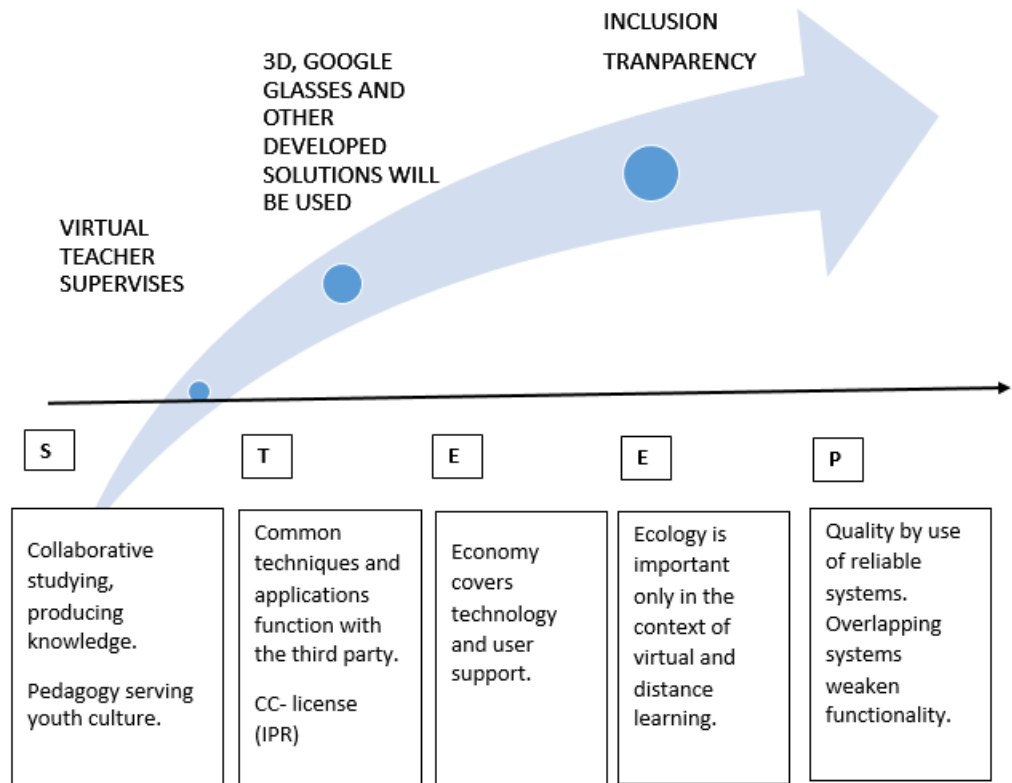


Figure 8. The common understanding under STEEP and three phenomena in terms of future.

The results of STEEP analysis is explained in detail under the defining themes: Socio-cultural forces, Technological forces, Economic Forces, Economical Forces, Political Forces and values in general.

S: Socio-cultural Forces

Techniques of learning are changing. A student is no more a customer or a consumer, but a participant in a building mutual understanding with other stakeholders. A student is also a deliverer of collaborative knowledge. Virtual systems should support this approach. Nowadays most of the students use ubiquitous technology – they are digital natives, independent of time and place. Students who are not, should also be taken into consideration. Furthermore,

pedagogical approach should be ensured and a dialogue concept should also be included in terms of work-life interaction skills. Pedagogy is forced to change and respond to the youth culture.

Team working skills should be developed by using virtual systems. There is a need for changing attitudes from old ways to study into more self-directed and collaborative learning. Still, different learning styles, such as introverted students, should also be regarded. Not only is the role of the teacher changing to be a supervisor, but due to the virtual systems increasingly diverse learning processes are possible.

T: Technological Forces

The Development and increasing utilization of virtual learning, including international connections, were shared opinions of all participants. When technology enables open connections and the strategy corroborates it, there are challenges in security, data protection and licences. Especially IPR (Intellectual Property Rights) is a factor which should be considered and the CC (Creative Common Licence) should be used.

A virtual connection between universities and universities of applied sciences is functioning, but due to the closed systems, they are not all open to third parties such as companies or public corporations. If so called open applications are used, for example *Google Edu Apps*, they can be used as a closed system for a certain project by using prearranged authentication, which is not student authentication.

The systems used in the FUAS organization should be the base for all projects. When new systems are purchased, also the potential participation of the third party should be considered. FUAS does not provide user support for *Cloud services* and *free open services*. Furthermore, they are not recommended applications by FUAS, except YouTube with certain privacy settings.

When systems and applications are purchased, the cost for the entire life-cycle is estimated. The recommendation for collaborative working in FUAS is Microsoft Office 365, including Sharepoint, Outlook and Yammer. Sharepoint can be used for writing and producing documents, while Yammer is a tool for communication at an organizational or project level. Lync is widely introduced as a video conference and instant messaging tool. They all are Microsoft products, which helps them to work in parallel. The target is also that all systems should be used both in PCs and mobile devices.

E-portfolio will present know-how and skills in a better way to a large audience than a normal portfolio. Furthermore, it can be used to set a vision for individual growth and self-development.

E: Economic Forces

Benefits and quality are essential criteria when purchasing systems for FUAS. Quality includes compatibility of various systems and also user-friendliness. The price is not the only factor. Users support is included in the total costs of FUAS systems as far as possible. There are some systems called *Free services* and they can be free when started to use and later fees will be asked. If user support is available, it can be surcharged.

Economic aspects rule life in many cases. The techniques and systems should be managed well by teachers and students in order to reach the desirable quality brand of FUAS. It means enough time for learning and teaching which is then connected to resources and money.

E: Ecological Forces

Virtual connections generally promote sustainability, but when purchasing systems for FUAS, ecology is not consistently followed. Other issues are more important

and more relevant. Ecological issues were not important in terms of techniques and systems and their management.

P: Political Forces

The technological solutions in FUAS should also consider the needs of the co-operation organization. Also the technology of that organization, such as their extranet, can be utilized. The FUAS systems can also be accessed by the co-operation companies for permanent use. According to the FUAS strategy, systems should be compatible with other systems in FUAS. Overlapping systems such as several e-mails or calendars weaken functionality.

Values in general

When FUAS recommendations and regulations operate, it also creates credibility of the quality of the organization and its proceedings. The definite and safe solutions will not stay permanently, but new solutions should be studied all the time and new recommendations should be given. FUAS virtuality can be seen as a product containing quick, understandable and clear communication. The brand describes FUAS as a renewable and open actor.

5.2 Reliability and validity of the Delphi study

This Delphi study aimed to find trends and frames for future in terms of virtual learning in FUAS. The results will be utilized in planning a FUAS study module called Traffic and Land Use Planning. The individual interviewees were to produce various opinions and future forecasts, which then were combined with an anonymous report. The report was commented by the interviewees. They could comment on opinions and conceptions of other interviewees, and in that way there was also adaptation or argumenting of new aspects among panelists. The results

after that were used as a base for planning a module and integrating work-life partners to it.

The main results referred to system development and took a stand on supported systems. Inclusion of the third party was a relevant question, but it was a challenge in terms of companies and their virtual connections. It was also seen that FUAS and other UAS units can produce the connection systems for projects.

The STEEP analysis helped to define the contents of the questions. In this study the most important themes were technical forces and socio-cultural forces. Still, it was also possible to define economic and ecological issues, even though they were partly included under the other themes.

Future forecasts were not surprising. This is because digitalization changes quickly and the addressed trends were familiar from other sources. Vahtila (2008) has defined in her Thesis future apprehensions in HUAS and according to that study e-learning, virtual meetings, utilizing social media and use of various mobile devices in learning will be brought into use. After six years of that study that all has happened. The most influential phenomena in terms of future were open courses and delivery of open course material. This follows the guidelines of the universities of the Open Education Consortium.

6 THE FUAS MODULE OF TRAFFIC AND LAND USE

The FUAS study module Traffic and Land Use has been developed in co-operation with LUAS and HUAS. LUAS will be responsible for the area of urban planning, HUAS will provide content of traffic planning, traffic safety and traffic psychology for the module. Each unit will produce an equal amount of resources. The specified themes steer the contents of the module and they are also considered when the know-how of students is evaluated. (Aarrevaara 2014a.)

The FUAS module Traffic and Land Use will take place in spring 2015. It will be worth 15 credits and it belongs to the FUAS focus area of Environment and Energy Efficiency.

The main purpose of the module is to provide an understanding of traffic planning as well as the interaction between urban and traffic planning (Aarrevaara 2014a).

The pedagogical approach will combine the theory of an each sector and students will work according to their own educational demands and goals. This means that environment technology planners will manage the planning process, while other partners for instance have skills in inventory and statements. The pedagogical approach is learning by doing. (Aarrevaara 2014a.)

6.1 The implementation of the module

The main knowledge and competences of this module are that a student knows the processes and meaning of urban planning as well as the principles of traffic network planning. Furthermore, a student is able to read documents and plans of street area planning. The evaluation of traffic safety in the planning process will be emphasized.

The students will be second-year students from construction technology and traffic planning in HUAS and environmental technology in LUAS. Other students can be taken to do complementary studies. The group “other students” will not be homogenous, but it can provide extensive contribution to the projects. Project teams will be formed with one partner from each of the four sections (Figure 9).

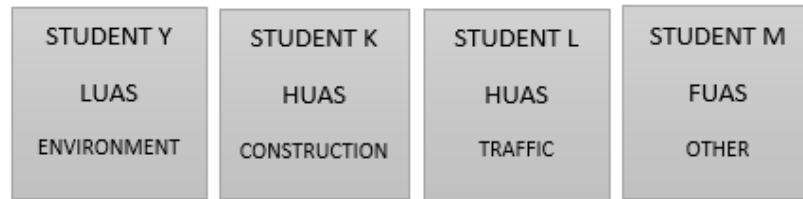


Figure 9. Team partners for the project

The suggestion for this module is that the project of the module will be a street plan for a town. It means that a client, a public corporation, submits background and directs the project in order to get plans for further processing. To achieve all the competences of this module and to ensure both participation and exchange of information among students, also other tasks have been incorporated and a matrix for the module is planned. Four different themes will be studied and the team will work out their project plan for each stage. After stage 4 a town street plan project is ready (Figure 10). The main themes also respond to certain competences of each UAS.

	STAGE 1	STAGE 2	STAGE 3	STAGE 4
	Highways and routes in land use planning	Arterial roads and their surroundings	Route lines in landscape	A town street plan
PARTICIPATION	STUDENT Y	STUDENT K	STUDENT M	STUDENT L
LAWS AND REGULATIONS	STUDENT L	STUDENT M	STUDENT K	STUDENT Y
CONSTRUCTION AND MATERIALS	STUDENT K	STUDENT Y	STUDENT L	STUDENT M
DIMENSIONING AND PLANS	STUDENT M	STUDENT L	STUDENT Y	STUDENT K

Figure 10. The matrix for the module.

The schedule and structure of the module differ from the project schedule and structure. The module schedule includes teaching and supervising, student work and evaluation (Figure 11). The project schedule is prepared by a student team and a project manager is selected. The schedule of the work-related project in this module concerns stage 4 and its structure has been presented in Figure 12. The project consists of student work, teachers' supervising and client comments and supervising.

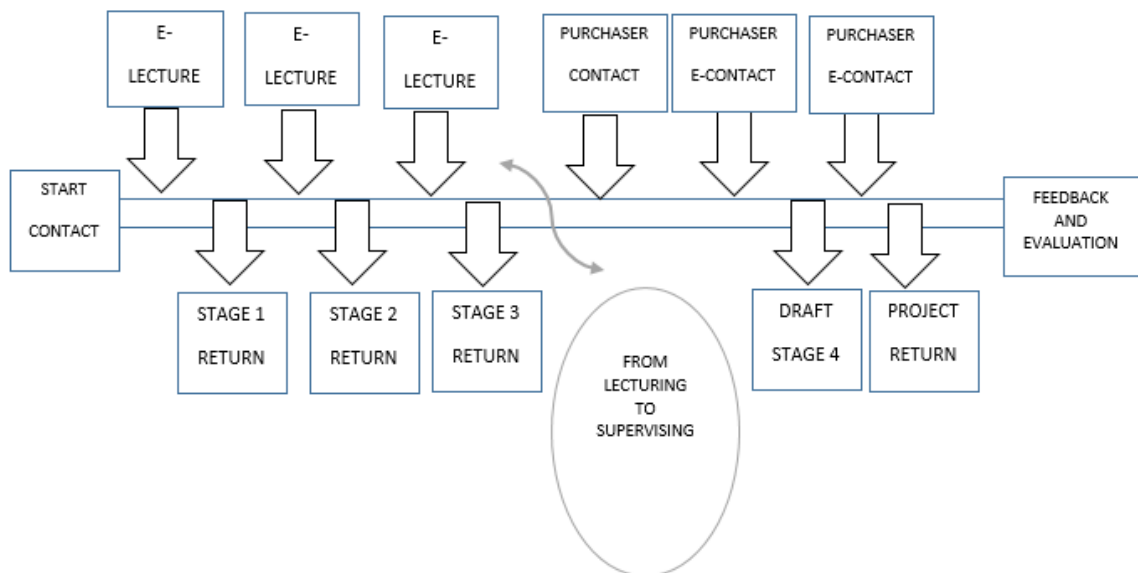


Figure 11. The module structure in a time line.

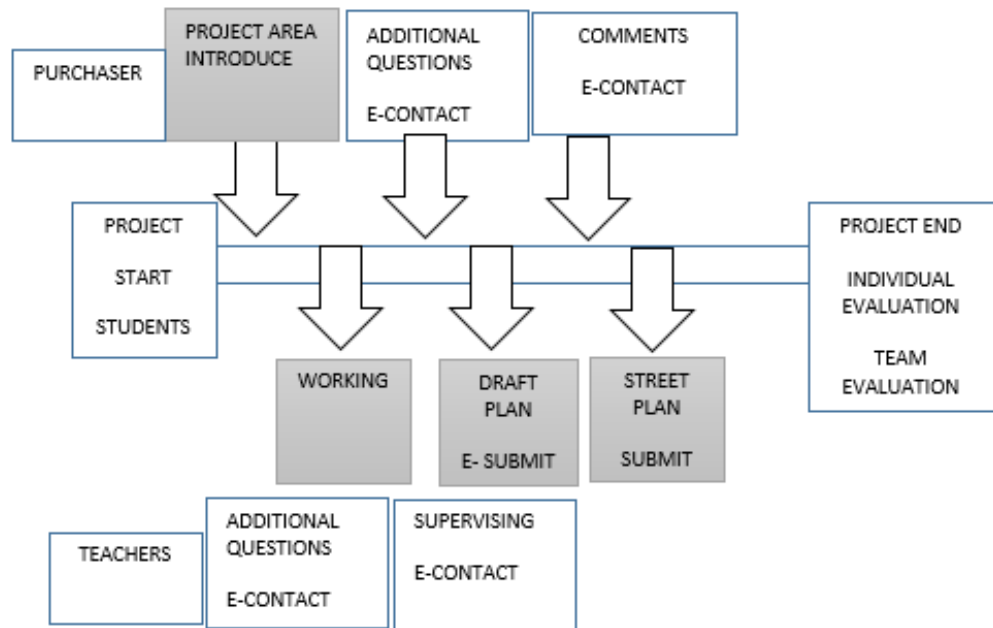


Figure 12. The structure of the project.

7 THE VIRTUAL SYSTEM CONCEPT FOR THE FUAS MODULE TRAFFIC AND LAND USE

The FUAS module Traffic and Land Use will utilize e-learning, which means an electrical education system based on the web. The decision to use web and suitable systems for learning comes from the FUAS strategy and also from the strategy of Niemi campus (LUAS). Both strategies aim to increase possibilities for e-learning interaction, to adapt new learning techniques and they are also considered in terms of sustainable development. The concept for the module shows the potential cases for the module and aims to open possibilities for other modules in FUAS. The focus will also be on the possibility that other partners outside universities can be connected to the project work. The concept for the module is presented in Figure 13 and the contents of the selected models are explained in the following chapters. The guide leaflet has been made for work-life partner to use (Appendix 2). The leaflet has to be updated for each project. The project name, co-operation partners and the defined virtual tools for a certain project will be written down.

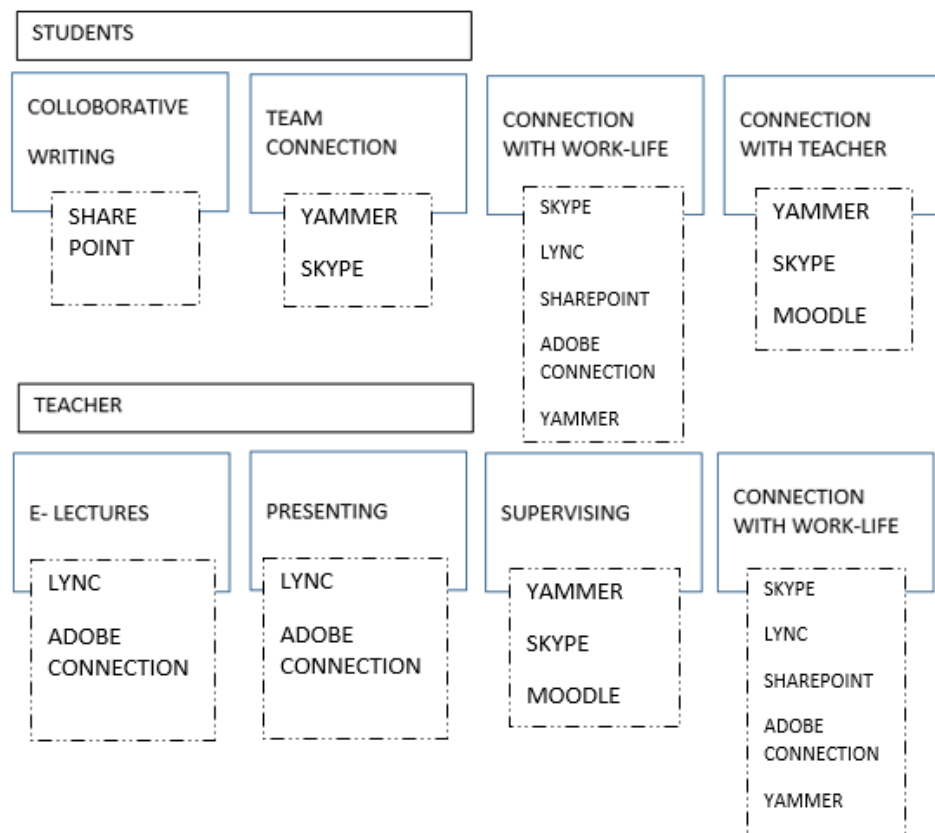


Figure 13. The virtual system concept for the FUAS module Traffic and Land Use.

Salmia (2014) defines certain factors in the following figure (Figure 14). Communication, information retrieval, material production, documentation and gaming as the main themes collect most of the actions of this module and they can be supported by using the recommended systems above.

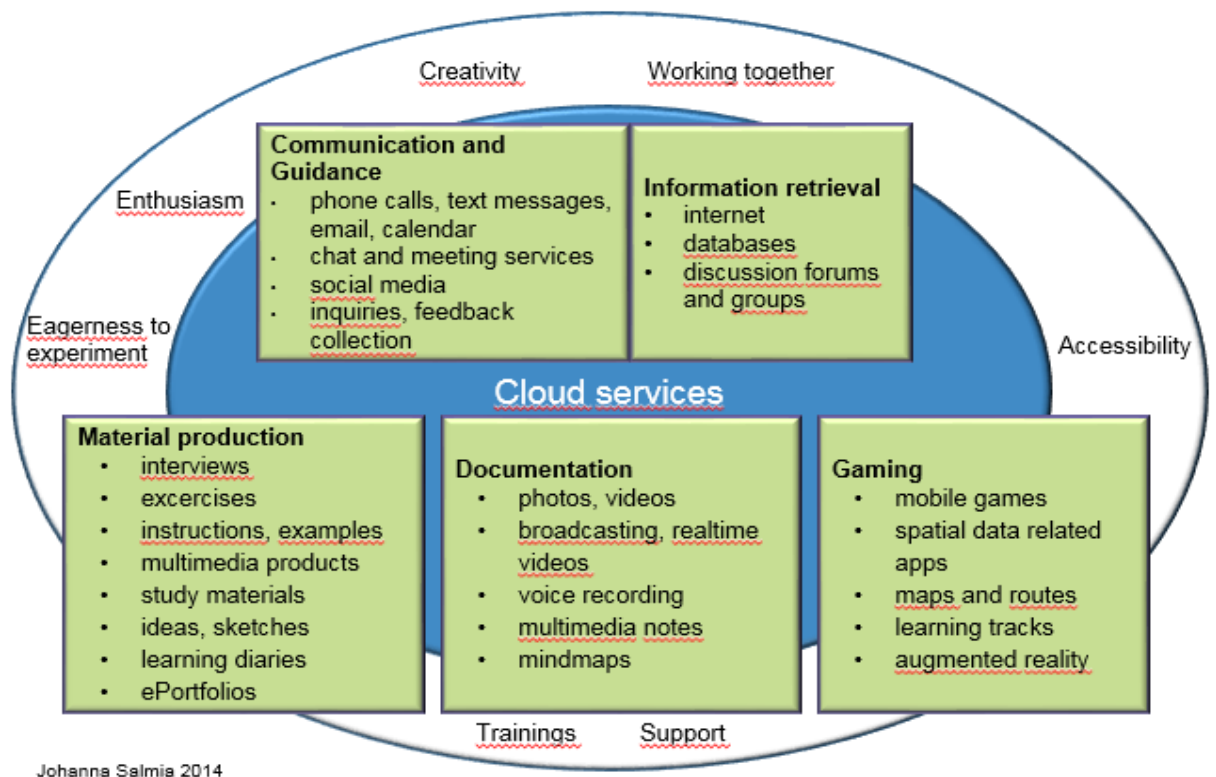


Figure 14. Actions produced by virtual systems (Salmia 2014)

7.1 The module workspace

The workspace of the module is Moodle. It is an online Learning Management system. It provides workspace for all different stages from the start to the evaluation

and feedback. Moodle can be logged in by all university students in Finland by using HAKA identification. It has been created to promote education and it will work well between FUAS units and teachers.

7.2 E-contacts

The project of this module includes meetings, e-lecturing and commenting of draft plans. Contacting and e-lecturing will be conducted by Lync or Adobe Connection. Lync is suitable for video conferencing, video lecturing and for instant messaging. FUAS actors have the accounts and rights to present and start meetings. The project partner can join Lync meetings by using a received link. The links can be created beforehand and they can be sent to FUAS actors to be accepted. Lync can convey voice, presentations and videos. Adobe Connection is widely used for meetings and presentation sessions. The functionality is ensured by using the link created for the meeting. The third system for e-contacts is Skype. It is already widely used, but one needs to have an individual profile to log in.

The virtual work in the module is done in synchronous parts and in asynchronos parts. The synchronous parts have a certain timeframe and the realization of that needs all studentst to be connected, while asynchronous parts can be utilized alone and at the most suitable time (Figure 15). E-lectures can be listened to in real-time, but they can also be listened to later. Lync can also be a tool for individuals to contact each other or for student teams to work on. It serves both asynchronous and synchronous parts of learning.

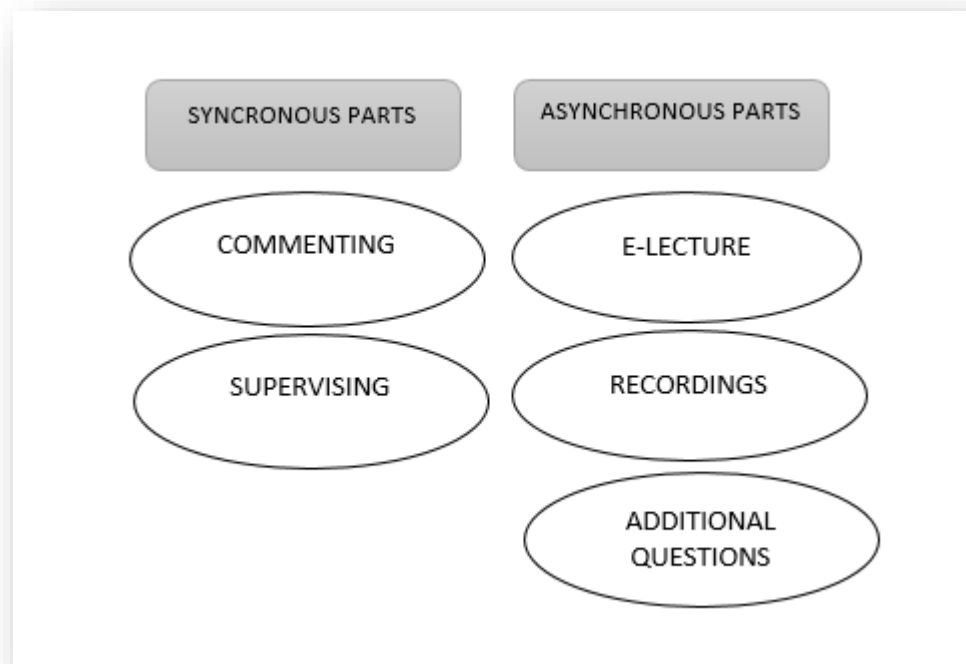


Figure 15. E-learning in this module includes synchronous and asynchronous parts.

7.3 Collaborative working

When students plan their own project, software tools are needed for writing documents together. Sharepoint includes all familiar applications for collaborative writing for spreadsheets and for presentations. They can be edited together and saved in One Drive. Links to these document links can also be sent to teachers and to a project partner. It depends on the given rights, by whom they can be edited.

A team collaboration software tool can also be Yammer. It is specially recommended for a project team. A project group can be created and discussion, ideas, photos, videos and voice can be shared with others by using Yammer. This interaction can happen anywhere and it can also be easily used by mobile devices. The process does not tie students inside, but lets them make observations and do their thinking in any place and at any time.

7.4 Evaluation

Self assessment is an important part of the study. Students have to recognize their own development, skills and learning. Furthermore, the team can evaluate team members' work and progress. Self-assessment is not a report of your work, but it should contain reflection of own development and criticism. It is done for one's own development. The different sectors of evaluation can be seen in Figure 16.

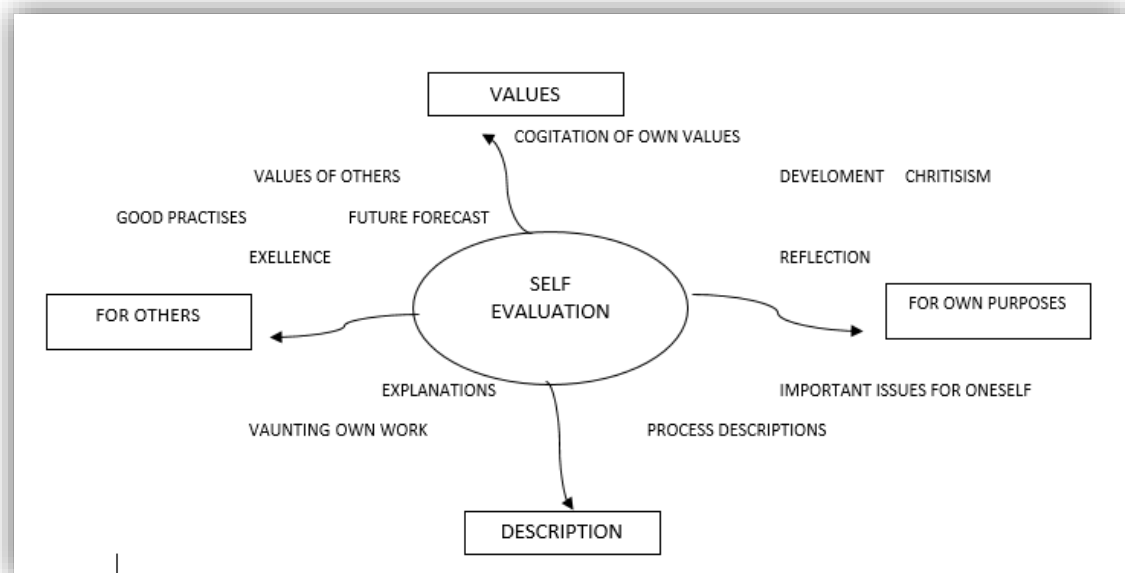


Figure 16. Self-assessment for different purposes (Huusko 2014). Modified and translated by S.Suomalainen.

A project assessment differs from a selfassessment. Its target is to evaluate projects by utilizing information such as productiveness, benefits, durability and effectiveness of a project (Pääkkö & Makkonen 2003, 13). The project can be evaluated by projects actors and also by an exterior evaluator.

What gets measured gets done

- *If you do not measure results, you can not tell success from failure*
- *If you can not see success, you can not reward it*
- *If you can not reward success, you are probably rewarding failure*
- *If you can not see success, you can not learn from it*
- *If you can not recognize failure, you can not correct it*
- *If you can not demonstrate results, you can not win public support*

M.Q. Patton (1997) Utilization-focused Evaluation

The visualization of knowhow and development is seen as a competitive advantage in terms of educational quality and promoting interests of contacts and co-operation partners. A system called Kyvyt.fi will serve as a virtual selfassessment tool for students. It will provide a possibility to save all projects and self-assessments in the system and open selected parts for everybody to see. It can be used as a portfolio also after studies (eEemeli 2012).

The project work also needs to be visualized to companies and organizations in order to show the possibilities of co-operation with students. Visualizing and presenting projects depend on the project owner and all operations should be agreed on. Visualizing can be done in web-sites when all rights have been insured.

7.5 Lectures and other material of this module

When working in a virtual world, also open material is produced. Openness and transparency were seen as a competitive advantage. Know-how and products can be promoted when they are introduced to others. Course materials in this module will be marked with CC - licence. The stamp allows teachers and students to use that material and for example redistribute, copy, transform and build upon it. Transformed material should be linked with the original materiaö and the name of “transformer” should be added (Picture 3).



Picture 3. Creative comons licence (Creative Commons 2014)

8 CONCLUSIONS

Virtuality is being developed strongly in FUAS. It is also seen as a method promoting change of the learning culture and enabling collaborative working. It can also promote individuality and innovative working.

Virtual connections can be an alternative for moving from one place to another, producing emissions. When virtuality is developed and integrated regularly into teaching, it will reduce the need of classrooms. The challenge concerning virtual systems is connected with the question how they operate with the third party.

The aim of this study was to plan a FUAS module utilizing virtual techniques integrating work-life partners. The assignment asks to plan the FUAS module Traffic and Land Use integrating a pedagogical approach to it. Furthermore, it was important to know what are the recommendations in terms of techniques and systems used in FUAS. After that it was possible to create a concept which still enables students and teachers to make their choices in it. It was also possible to find out how the role of the teacher changes from a lecturer to a supervisor. Work-life partners are integrated to this module by using FUAS systems and due to this an introduction leaflet was developed. The introduction leaflet should be updated and developed for every project.

E-learning and virtual connections are linked to the project. Virtuality is often considered an action independent of time and place, but when a project timetable regulates the synchronous parts and the asynchronous parts, e-connections are tools in operation along the project timetable. Scheduling is also part of the collaborativeness which also rules certain parts. Only some asynchronous parts comprise independent e-learning. Interactiveness can be reached by using several virtual systems of FUAS.

Inclusion and transparency are big issues in terms of privacy and material delivering. When actual trends in business and education are considered, transparency should be promoted, and its best practices should be shared. Still, competitiveness, at least when referring to companies, can direct the co-operation agreements. Definition of transparency has not the same notion for every stakeholder. Transparency is an

increasing trend in education. The development needs regulations, CC (creative commons) licence is one step in that process.

The techniques used for this module are recommendations of FUAS. The recommendations were gathered through Delphi study. They have also been chosen to serve as the pedagogy of this module. They also enable implementation of all systems needed in project work and they also prevent overlapping systems. In this study the onionmodel (page 5) has been clarified and many of the prior “*Free Services*” have been replaced with FUAS systems. They receive user support, which ensures that quality in these cases will be reached. FUAS procedures will be accessed by the third party. Quality is an essential factor in terms of work-related projects and functional systems when it comes to the image of FUAS.

Digitalization changes quickly and it is important also to have resources to study and to adapt new systems. The holistic architecture is managed by professionals in FUAS, but because project oriented work with a third party is more obvious then earlier, it is also important to develop virtual co-operation based on the feedback.

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APPENDIX 1

Delphi haastattelu

Delphi-method

Teknologiaan liittyvät kysymykset

Technological questions

6. *Mitä järjestelmiä FUAS ammattikorkeakouluun tullaan hankkimaan- (omat/pilvi/muut ilmaispalvelut)?*
What systems will be provided for FUAS (own provided/cloud services/other free services)
7. *Millaisia yhtymäkohtia niillä on virtuaaliopetuksen kehittämiseen?*
What are important factors in development of virtual learning?
8. *Mitkä olisivat kehitettäviä asioita työelämän yhteyksien suuntaan?*
What are important factors in terms of work- related projects?
9. *Onko näköpiirissä innovaatioita, joita aiotaan ottaa käyttöön?*
Are there certain innovations to be utilized in terms of virtuality?

Politiikkaan liittyvät kysymykset

Political questions

10. *Onko tavoitteena pitää osa järjestelmistä suljettuina? Mitkä?*
Will certain systems remain closed systems?
11. *Onko tavoitteena kehittää järjestelmiä yhteistyössä ulkopuolisten kumppaneiden kanssa kanssa?*
Is there a goal to develop systems in co-operation with actors outside the FUAS?

Talouteen liittyvät kysymykset

Economic questions

12. *Onko ennakoitavissa pilvipalveluiden ja muiden "ilmaispalvelujen" muuttumista maksullisiksi?*

Has it been considered that cloud services or other free services will not maybe are or remain free?

13. *Mikä on hankintaperusteena kustannusten lisäksi?*

What other factors will be considered in addition to costs?

Sosiaalisuuteen liittyvät kysymykset

Social questions

14. *Millaisia kriteereitä yhteisöllisyys ja yhteisölliset oppimistavat tuovat järjestelmiin ja käyttötappoihin?*

What criterion of systems will be considered in terms of community learning?

Ekologiset kysymykset

Ecological questions

15. *Miten ympäristönäkohdat vaikuttavat järjestelmien hankinnoissa ja suosituksissa?*

Will environmental aspects be taken into account?

Arvot

Values

16. *Miten valinnat vaikuttavat FUASIN imagoon?*

How will the choices build image of FUAS?

APPENDIX 2

Instructions for companies, public corporations and to other third parties to use e-connections in FUAS projects.

The name of the company/project _____

FUAS _____

Date

Logo

PROJECT TIMETABLE:

Project timetable will be seen in Outlook calendar. The start, milestones and other defined actions will be marked.

CONNECT WITH THE PROJECT
PARTNERS

WATCH PRESENTATIONS

LYNC

Lync is a video conferencing and instant messaging tool. You can join meetings and presentation sessions when you have received a link by e-mail. After that, follow the instructions given in that link. More information:

http://office.microsoft.com/fi-fi/communicator-help/pika-aloitus-online-kokouksiin-osallistuminen-lync-web-app-ohjelmalla-HA101901732.aspx#_Toc273360595

ADOBE CONNECTION

Adobe Connect is a web conferencing platform for web meetings, eLearning, and webinars. You can join meetings and presentation sessions when you have received a link by e-mail. Log in as a guest. More information:

<http://www.adobe.com/fin/products/adobeconnect.html>

SKYPE

Skype can be used for group meetings. You have to download the free Skype and you need your own profile to connect with other stakeholders. More information:

<http://www.skype.com/en/>

YAMMER

Yammer is a tool for social networking and sharing information in groups you have joined. It is a tool when instant answers are not needed. Furthermore, a discussion in Yammer can develop the issue. More information:

<https://yammer.com>

WRITE DOCUMENTS TOGETHER,
COMMENT DOCUMENTS,
COMMENT DESIGN PLANS

SHAREPOINT

The project schedule and documents will be delivered as a link to shared systems. It depends on documents if also editing rights are given. If commenting and editing is asked, please add your name after your alterations.

The following links describe the Sharepoint, but in this project it is necessary only to use the received link.

<http://products.office.com/en-us/sharepoint/sharepoint-2013-overview-collaboration-software-features>

<http://office.microsoft.com/fi-fi/sharepoint/>

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