



# EUROPEAN REPORT ABOUT "THE DEVELOPMENT OF INNOVATION COMPETENCES IN THE LIFELONG LEARNING SYSTEMS"

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 **TURUN KAUPPAKORKEAKOULU**  
Turku School of Economics



 **APEE**



## 1.- CONCEPTUAL FRAMEWORK: Innovation ability, competence, lifelong learning systems, etc.

Discussion on Innovation ability should begin with clarifying what we mean by ability and by innovation. *Ability* is understood as developed through teaching / learning person's aptitude, applying knowledge to achieve theoretical or practical goals (Pukelis, 2009).

*Innovation* is related to something new (new idea, new methods of doing something) or different introduced. To be called an innovation, an idea must suit the economical cost and must satisfy a specific need. Innovation involves deliberate application of information, imagination, and initiative in deriving greater or different value from resources, and encompasses all processes by which new ideas are generated and converted into useful products. Most of the definitions of innovations emphasize the forward looking and being ahead. Therefore planning of better situations for the future requires innovative solutions.

So, as we can see, there isn't only one acceptable definition for innovation. Innovation is always reliant on situation, place and starting point. It can also be feature of individual, community or society. Innovation is the result of cooperation between many actors. Cooperation can come about in a fruitful innovation environment. In a complex world of fewer borders, the production of competitive innovations needs more multi-dimensional networks in which knowledge, skills, abilities, needs and interests can connect. In general innovativeness can be practical creativity which can lead to new inventions and ventures. Typically result of innovation is new product or service but that is only small part of innovation outcomes. Herein innovations can be connected to individual abilities and competencies which can be developed and promoted by learning.

So maybe we can describe some colloquial closed definitions of what we understand by INNOVATION

1. "Innovation is the ability to see change as an opportunity – not a threat"
2. "Learning and innovation go hand in hand. The arrogance of success is to think that what you did Yesterday will be sufficient for tomorrow"
3. "A dream with courage is innovation... A dream without courage is a delusion"



Figure 1

CREATIVITY and INNOVATION do not come by itself, but we would, and we must work to develop it. The relationship between the two concepts are:

- Creativity is about being able to think new
- Innovation is about wanting the new, along with other
- Creativity is difficult to evaluate and assess
- Innovation is evaluated based on a utility
- Innovation is often a social process where the users, the community, "the other" is part of the process

So we got the conclusion that LEARNING is crucial in promoting innovativeness. Learning enables to understand and create own opinions in education and in business world as well. Schools, teachers and education system in general have primary liability to offer students possibilities to develop their innovative thinking and bring out their own thoughts.

Abilities or competencies related to innovativeness are many and there isn't right answer. Self-knowledge, motivation, capability to learn, initiative and active attitude are some features which can be seen as innovation abilities. Innovation abilities can also develop social, learning, thinking, working, and problem-solving skills, and to foster active participation like at school. An important task for the 21st century is to attend to students and teachers well-being which is the base for learning and therefore innovativeness too.

Talking about innovative education and training, one should also refer it to the changing roles of teachers, being the providers of creative and innovative teaching. In the context of rapid changes in labour market, economy, therefore in education as well, the role of the teacher is no longer only lecturing. Nowadays teachers have to perform much wider variety of roles.

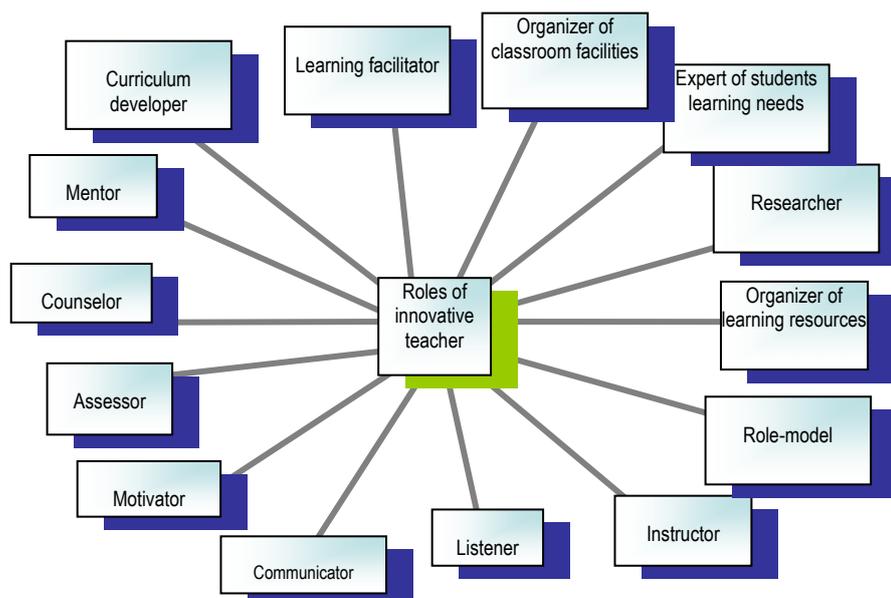


Figure 2

As it can be seen from the above chart., the multiple roles that teachers have to play in modern schools, is one of the challenges for teacher education institutions as well. The curriculum, assuring the possibility to acquire certain knowledge and skills in order to perform these roles at schools, is needed. Reshaping of teacher education system towards better teaching services is one of the priority tasks of educational reform in Lithuania.

Anyways, the reality shows us that the concept of innovation is more common in business life than in education and teaching. Therefore, it is difficult to define what innovativeness in education and teaching is. One Finnish research (2009) *Innovation and innovativeness in teaching* represent that teacher who works innovatively is a pedagogical professional with regenerative ability. Teacher also uses many teaching methods and interacts in a flexible and learner-centred way. Next picture shows some features what kind of innovative teacher could be.

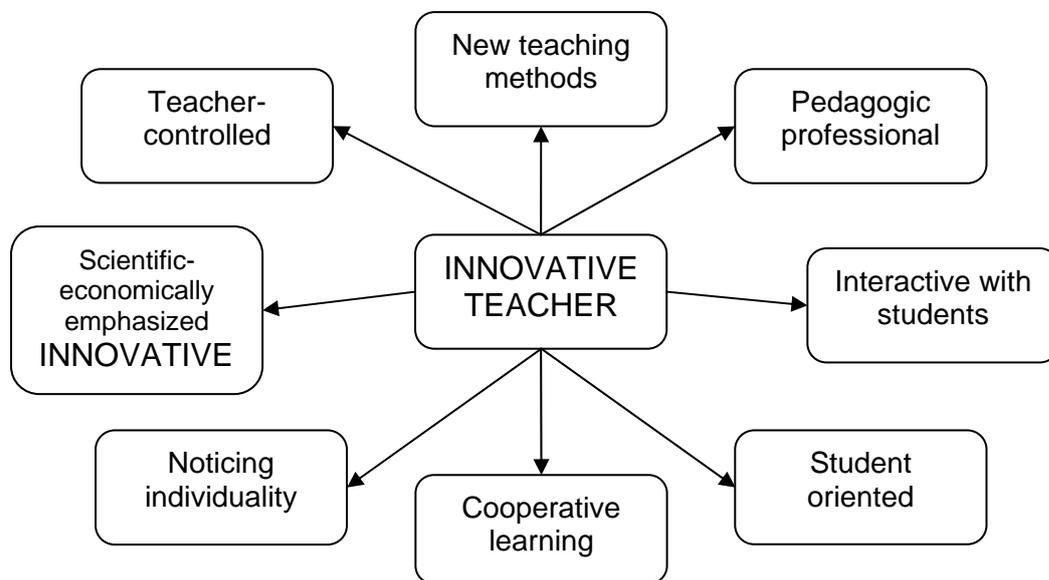


Figure 3. Innovative teacher (adapted Tenhunen et al 2009)

Teachers in the different education levels are defining innovativeness in different ways. For example teachers in basic education appreciate more teacher-controlled way and discipline. Teachers in higher education value more different working methods and integration of subjects. Teaching can be also seen as a kind of leadership. Teaching requires sharing leadership, risk-taking ability and low amount of bureaucracy. After all, teacher is a situational manager in the classroom.

When developing teaching more innovative these matters should be took into account and consider in teaching. Timetables and good planning are the base of teaching and that teacher know own students and their needs. Creativeness and innovativeness should be presented in simple way and those should involve in teaching carefully. Possible methods to add students innovativeness is to use different methods in teaching for example experimental learning, different competitions and plays, stimulating teaching materials, brainstorming and working as a group.

Challenges in nowadays teaching are big teaching groups and hurry. There isn't always time for innovations and creative thinking. Teachers are in some point in middle piece where they should handle basic teaching and promote students own abilities and competencies.

At this point, it could be very useful to know the key words in Finnish education policy: **QUALITY, EFFICIENCY, EQUITY AND INTERNATIONALIZATION**. We must know the background of Finland's success in education follows these points:

- Equal opportunities
- Comprehensiveness of education
- Competent teachers
- Student counseling and special needs education
- Encouraging assessment and evaluation
- Significance of education in society
- A flexible system based on empowerment
- Co-operation
- A student-oriented, active conception of learning.

We must consider the INNOVATION as a competence that is fed by all of the human bean experiencies. Regarding to this, real competence involves the 3 learning systems described in at European level (FORMAL-NON FORMAL-INFORMAL). This means a person's knowledge, skills and competencies. This applies whether they are obtained in the formal education or in work, as we learn on the job or participating in-house employee training. It can also be when we are in the public information implements a college residence, and thereby get personal and social skills when we take a computer course at night school or participating in the voluntary sector in various activities, such as an active volunteer in a charity. The figure illustrates the three learning areas:

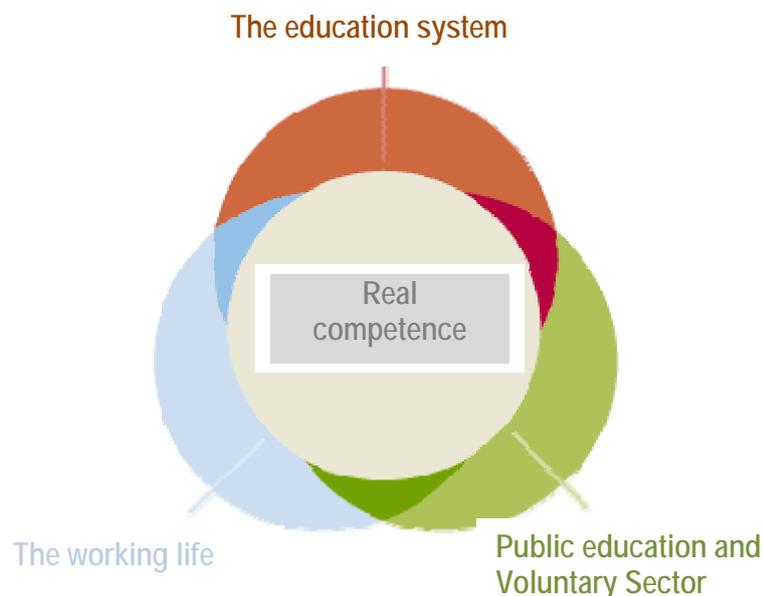


Figure 4

## 2.- STARTING POINT OF THE STUDY ANALYSIS; innovation in European Lifelong Learning Systems

Basing on nowadays realities, one can expect a more active search for innovations as a source of cost efficiency and also innovation-based competitiveness, and consequently, an increase in shares of innovative experiences.

The TRAINING INNOVATION partnership agreed that the 4 main challenges for developing an Innovation policy in Europe can be mentioned:

1. Improving skills for innovation and entrepreneurial attitudes (combination of high level of population with tertiary education on one hand, and low application of the skills in the economy, initially resulting in a low level of new-to-market innovations, absence of new technology-based firms and low level of employment in high tech services and industries).
2. Building R&D capabilities in firms and development of sound R&D base
3. Development of knowledge intensive clusters across public knowledge poles
4. promoting a new social awareness about the importance to apply INNOVATION in all the human senses.

Nowadays, the concept of education must include not only theoretical teaching. Increasingly, there are schools, vocational training centers, polytechnics and universities that are trying to promote innovation in their ways of teaching, because their aim is: to get ready their students to a satisfactory adult life.

We are beginning to give away to the old concept of teaching. In fact, the regional innovation systems explain that in order to get innovation, there must be a combination of actors, where education is fundamental. In fact, Innovation is not possible without the support of the educational system.

Kindergarten, primary, secondary, high school education and vocational training are worried about how they could implement new ways of teaching and therefore of educating their students. They are trying to work in small groups, work by projects, promoting new ways of doing things promote that they develop new ideas, they develop their minds. They are looking to develop an environment of acting, where innovation is present.

This new way of working will allow teachers to observe and interact in a more dynamic way while teaching, leaving students work free, supporting their ideas, their contributions, etc, we are somehow helping to prepare our students to cope with today's society, a society which advocates a set of values where innovation plays a key role.

### 3.- THE ABILITIES AND COMPETENCES LINKED TO INNOVATION IN EUROPE. State of art.

Changes in the world of work, such as growing competence requirements, rapidly changing work tasks and contents, changing job descriptions and the growing significance of innovation, will mean growing challenges for the quality and provision of education and training services in general. Placement on the job market requires solid knowledge and skills in order to work in varying and different jobs. Versatile jobs provide a basis for further development of knowledge and skills and that can be utilised in different working environments.

Acting innovative is a result of many matters. Education, job experiences and features of individual itself are all contributing to how innovative you are. In accordance with some of the European Countries National Strategies (Finland, Denmark, Sweden, etc.), one way to strengthen the competence base is to reform education and training. In addition, cooperation between different sectors is increased in research and development, innovation and research infrastructures. Schools, Vocational Training Centres, Universities and Polytechnics have maybe the most important role in promoting innovativeness in Europe. Strong vocational skills are crucial in the efficient utilisation of the latest innovations in production, services and society in general. In addition, training providers are playing an increasing role in developing business and working life and in the service sector. Innovativeness in education and teaching is a growing topic. Discussion is focused on circumstances where innovation can be born. In general can be said that innovation is the result of learning or research process. Next are presented two features, COOPERATION and ENVIRONMENT, which can be seen as promoters of innovations.

1. **COOPERATION**: For innovation, cooperation and networks to emerge the actors often have to be close to one another. Trust is built on direct and close interaction between individuals. Cooperation and networking are important in learning and discovering. One way to support innovativeness is to create collective environment where children and adults as well can share ideas together. In pedagogy research is found out that collective learning assist also individual learning. In Finnish education for example team work and interdependence are used methods in teaching.
2. **ENVIRONMENT AND ATMOSPHERE**: An innovation environment is highly likely to mean the framework and criteria for an innovation system, such as a viable labour market, research and education and training system, intellectual property rights, business and market legislation and reliable social institutions. Diverse environments also promote unlikely encounters, which result in the most unexpected and revolutionary innovations. A truly innovative environment seeks and establishes links to the places where the necessary knowledge and skills can be found at the same time. Different cultures and practices are part of everyday life all around in Europe. New practices and innovations are created in communities where different peoples meet each other and the various groups trust each other. A free atmosphere based on trust contributes to the creation of communities of various competences and encourages creative activities and innovativeness. In addition, international cooperation and internationalisation are prerequisites for improving quality and strengthening the innovation base. At this point, the efforts that are being made by the European Commission through the different mobility programmes are very important.

Anyways, as we have remarked during the whole document, the INNOVATION is an ability that must be developed through the different human development areas. In this sense, we could talk about the “DEVELOPMENT OF INNOVATION SKILLS” in these 3 areas:

1. **IN EDUCATION & TEACHING FIELD.** We can feel that nowadays in Europe teacher education curriculum is being revised. The multiple roles of a teacher are being approached, and the curriculum developed accordingly (see Fig. 2 for reference). As one of the important needs of teachers, the creative intelligence can be mentioned. It is important that the representatives from teaching professions can develop their abilities *to “see the different angles”, to find the new ideas / solutions quickly, as well as to expand on their existing ideas.* Creation and *use of virtual environments for teaching and learning* can be mentioned as another urgent issue for teacher education. For quite a lot of teachers in Europe, the application of active learning / teaching methods is an urgent issue, to be addressed. One more competency of teachers, linked to innovation, is forecasting the training needs and revising the curriculum accordingly. *It is important to be able to describe what kind of innovations are lacking and are needed in order to improve current situation, or to avoid the current problem.* In other words, needs for innovations can vary from country to country, depending on local achievements in economy and traditions of education. What is called innovation in one country can be called a tradition in other.
2. **IN THE VOCATIONAL TRAINING FOR EMPLOYMENT.** Taking into account the increasing unemployment rates in Europe, it is important to provide training not only corresponding the labour market needs, but also the personal development needs, namely, abilities to change, abilities to adapt to a change / new situation, as well as abilities of –professional reorientation, positivism and openness, as well as life-long learning abilities are important.
3. **IN THE EMPLOYMENT AND HUMAN RESOURCE DEVELOPMENT.** Social partnership between educational institutions and enterprises is one of the most important issues in implementing the reform of education. Students both in vocational education and higher education are lacking the possibilities to obtain practical skills, as the social partnership is not functioning enough. Employers require that the alumni of VET and higher education (HE) institutions have practical skills before entering labour market, but nor VET neither HE institutions are not able to train those in their formal education settings. However, basing on surveys on employers’ expectations on the competence of their employees, the employers are mentioning that not only professional skills, but also general skills, such as effective communication, teamwork, ability to work autonomously, and working in international teams are highly required. Aiming to assure the acquisition of these skills, providers of formal and non-formal education, should revise their current curriculum.

Summarizing, to promote and help to the people to develop the COMPETENCES & SKILLS linked to a INNOVATION attitudes we must try to favour an INNOVATIVE EDUCATIONAL MODEL all across Europe; and this will be reached if we:

- PROMOTE POSITIVE ATTITUDES
- CREATE SPACES AND FACILITIES IN EDUCATIONAL INSTITUTES
- ENCOURAGE THE DEVELOPMENT OF VALID EDUCATIONAL PROPOSALS TO RESPOND TO THE REALITY NEEDS
- PROMOTE FLEXIBLE CURRICULUM CHANGES, CREATIVE & PARTICIPATORY
- IMPLEMENT OF THE DIFFERENTS THEORIES, PROCESSES, METHODS AND TECHNIQUES
- ESTIMULATE THE RESEARCH AS AN EVERYDAY DETERMINANT TRAINING ELEMENT

#### 4.- EXPERIENCES AND BEST PRACTICES: Experiencias y mejores prácticas. It seeks to identify some experience that it's being developed in our country to encourage these abilities

##### 4.1.- Best Practices in DENMARK to encourage the competences and skills linked to innovation

###### YOUNG ENTERPRICE

**Young Enterprise** is an international non-profit business and enterprise education organization, with a Danish head office in Odense and several regional branches. In regional Zealand (Storstrøm) YE has existed since 2004.

YE offers a range of programs, based on the principle of Learning by Doing, which brings volunteers from business into the classroom to work with teachers and students. Some of their programs enable students to work together to run their own real company. Others use games, hands on activities and role play to develop skills and capabilities for business and enterprise.

YE is mainly targeting high school and business college students as well as elementary school students. In region Zealand (Storstrøm) YE is primarily activating business college students.

The businesses and volunteers that support Young Enterprise take an active role in building a better-motivated, educated and enterprising workforce, at the same time making a real difference to the existing lives and future potential of young people who live and attend school in their area.

The most significant YE program that has been implemented in the region is Company program. This activity is primarily targeted business college and technical high school students (HHX and HTX) by the common purpose of enabling young people to learn about the world of work and to develop attitudes and skills for personal success, lifelong learning and employability through the real experience of running their own company over one academic year.

Young Enterprise student companies elect a board from amongst their peers, raise share capital, research markets, source materials, organize production and sell their products before preparing an annual report, liquidating the company and paying dividends. Through this, students develop skills such as decisiveness, enthusiasm, flexibility, the capacity to mix with others, creativity, planning, self confidence and the ability to communicate effectively. Student companies are competing on sub-regional, regional and then on national level.

The final competition is international, where all national winners from European countries are competing with each other. Through the past several years the participating students from region Zealand have demonstrated great results in the national competition and were among prize winners several times.

### GREVE BUSINESS CENTER

**Purpose:** The school runs with five different line-bid for its 10th classes. Each line cultivates his special touch with industry. It is school anxious to tell students that jobs and business opportunities are exciting and diverse and to give students the opportunity to become acquainted with a wider range of "futures". Running a business is one of those opportunities, but this initiative seeks wider.

**Background:** The school places great emphasis on its enhanced business collaboration, among others operated with great assistance from Greve Business Center. Educational, vocational and occupational guidance is often so terrible "dust", so this is also an attempt to make it more exciting and relevant.

**Form:** Each of the five lines of work with themes such as ICT or design. The switch to business is based on these themes. Students solve problems for businesses. The school will also hold a one-day workshop with presentations from particularly exciting business types.

**Description:** Firms providing tasks for pupils, which resolved over a week in close cooperation. Students visiting the company and speak with owner and staff to get an idea of production and working form. Tasks carried out by management and students agree to resolve, inter alia, the design of a new graphic line for the company or setting up an account. Corporate representatives are included in the evaluation of the tasks. Workshops held over one day. There are usually six different messages in the program where students can join the three. Businesses - including entrepreneurs - talks about how they started their business, and how it operates. Greve Business Center contributes lectures on for the conditions for running a business. The companies themselves who organize their own observations and the school make no attempt to try to influence the distribution shape. For the workshop trying to find business school types who are very special. You will like to introduce thought-provoking life outside the completely normal 4-8 job types. For example, the school had the Sirius patrol visits and a rock band. There was also room for more general business forms, ranging from sandwich bars to IT companies. An attempt to run the workshop "adult" as a great conference with presentations and questions - and fruit during the breaks.

**Experience:** Students expressed a high satisfaction with both tasks and workshops. Especially bring messages from and visits to the slightly more extraordinary and spectacular business types much time with students. It expands greatly horizon compared to the career choice that is imminent for them. Since it is the school's stated profile to cultivate professional cooperation, so the teachers are generally also strong support for the activities. It offers teachers a year 2 days of work experience as part of the strengthening of this profile. It is an offer that most teachers are very happy.

**Main problems:** The most difficult is to find companies that have the resources to engage in cooperation. It is not because the interest is missing, but often reality businesses takes over, and they get busy with many other things. The motivation amongst teachers if companies canceling or pushing agreements - apparently without fully recognizing the great organizational work is in getting a class prepared and made ready. When we talk past each other on these points, there is a tendency to prejudices about each other cemented unnecessary.

### THE CREATIVE PLATFORM

The Creative Platform is a new pedagogical approach where the creative process is the mean to any kind of learning. The Creative Platform is developed at Research center for the Creative Platform at Aalborg University, Denmark. The Aim in developing The Creative Platform is to develop a pedagogical approach where the students creativity is developed at the same time as their professional knowledge. The Creative Platform is Open Source and all teaching materials are offered for free for anyone who would like to use them.

In Denmark we have developed a number of teaching materials, among others, together with Young Enterprise. To Young enterprise we for example we developed complete materials for the primary school and a course for teachers in how to use The Creative Platform in their own teaching. In this and other similar courses around 400 teachers have participated.

We have documented The Creative Platform in a number of books and papers which can be found at our homepage: [www.denkreativeplatform.aau.dk](http://www.denkreativeplatform.aau.dk). We also posted a blog for The creative Platform at [www.denkreativeplatform.dk](http://www.denkreativeplatform.dk) . Here around 25 professionals within the educational community participates in further development of The Creative Platform.

Inside the educational system the target groups are all levels from primary school to Ph.D. level. At the moment we are involved in projects in primary schools, high schools, Universities and technical schools. The Creative Platform is a pedagogical approach which teach children and adults to think and behave more creative during their study. There is no limit to where this approach can be used.

At the Research Center for The Creative Platform we are doing research in how to use this complete new way of pedagogical thinking in different settings. Up til now we have been focusing on inter disciplinary teaching and learning. Now we focus more on creativity in single subject teaching and learning. It is a research project called "Professional understanding is a creative process". Besides the research center different networks and companies are developing and providing teaching based on The Creative Platform. Within the educational system the largest is Fonden for Entreprenørskabs network for The Creative Platform. Here around 25 professionals are working with The creative Platform.

#### 4.2.- Best Practices in FINLAND to encourage the competences and skills linked to innovation

##### VIRTUAL LEARNING ENVIRONMENT / WEB-TEACHING

Web-teaching is defined method where Internet is used according to plan in the teaching. Web-teaching can be divided into three parts: structured teaching, self-access learning and multiform teaching (blended learning) where is used both web-teaching and traditional teaching. In addition, web-teaching can be utilized resource-based learning or interactive approach.

Web-teaching is student-centered way where teacher is trying to support individual development and innovativeness. Teacher doesn't necessary provide all the learning materials but students are expected to search information by itself and recognize what is crucial for learning. Teachers have different roles in web-teaching. Teacher can be producer of materials, experimenter of new methods, supporting person, tutor, mentor or specialist.

Finnish schools (in all levels) have possibility to arrange courses in Internet. For example Moodle is a virtual learning environment where can be managed versatile courses related to for example innovation and creativity. Moodle is an open source course management system which was started by Martin Dougiamas. At the moment Moodle is used and developed by hundreds of people around the world. Moodle is built upon sound pedagogical theories and it is based on social activity. In Moodle is possible to teach in online, share documents, make conversation and so on. Moodle gives freedom to students to work and learn when they have time and when they are thinking creatively because learning to become innovative and being innovative doesn't consider time and place.

Web-teaching and virtual learning environment are innovative methods in teaching. Internet enables more informal learning and place and time for learning are not beforehand given. In addition, distance teaching is possible and it is important at least in upper education level. Challenge is to get more computers in schools and students should have own computers as well.

### EDU.fi – WEB SERVICE FOR TEACHERS

EDU.fi is web service which is directed to teachers. There is available teaching materials and other supporting materials (like competitions and theme day ideas) for every day teaching. Service is channeled mainly into nine-year basic education (comprehensive school) and upper secondary education, comprising vocational and general education. EDU.fi is executed by Finnish National Board of Education and it is also available in Swedish. Aim is to support teaching, learning and theirs developing and also distance teaching.

In EDU.fi is thematic entities from which teacher can select suitable parts for own student groups. There is covered all basic subjects like mathematics, history, biology and mother tongue and also some specific themes like culture, internalization, media, entrepreneurship, sustainable development, well-fare and technology. For example in teaching technology there is material about:

- why it is important to study technology
- description about technology industry in general
- examples of jobs if you are studying technology
- character descriptions about peoples who are working in technology industries
- required characteristics and skills in technology
- good practices
- web materials and new ideas for teaching.

As can be seen EDU.fi offers many new and innovative materials and ideas to teach both traditional and specific subjects. That is toolbox for teachers which are interested in to develop own teaching methods and having new ideas in class rooms.

#### 4.3.- Best Practices in LITHUANIA to encourage the competences and skills linked to innovation

##### ASSESSMENT AND RECOGNITION OF PRIOR LEARNING ACHIEVEMENTS IN LITHUANIA

After having analysed the VET teacher education systems in Lithuania, Latvia and Estonia, it was recognized that in all three countries VET teacher education traditions were similar, and lacking the possibility to assess and recognize the non-formally and informally acquired knowledge and skills. Innovative solution was needed. At the same time it was found that Finland already has a tradition of APL in VET teacher education, therefore Finland was invited to transfer this innovation to three Baltic countries – LT, LV and EE. In 2007 Vytautas Magnus University has launched the project “Transfer of Innovative Methodology for Assessment of Vet Teachers’ Prior Learning” (No. LdV-TOI-2007-LT-0004). The aim of the project was to enrich the existing VET teacher education programmes in three partner countries – LT, LV and EE by developing guidelines for Accreditation/Assessment of Prior Learning (APL) system to be included into the VET teacher education programme and to be followed with development of more personalized learning possibilities within VET teacher education which are taking into account and are based on assessment and recognition of prior formal, informal and non-formal learning of teachers. The development of the results was based on the experience of good-practice of donor partner from Finland – Jyväskylä University of Applied Sciences, Teacher Education College, where the assessment and recognition of VET teachers’ prior learning is being implemented. This way project results contributed to the more effective and flexible VET teacher education programmes in “receiving” partner countries. Project aimed that the main outcomes (APL methodology, study module for assessors of VET teachers’ prior learning and the introductory APL module for VET teachers’ education programmes) would promote the implementation of the ideas of lifelong learning by valuing individual learning achievements, increasing the accessibility of VET teachers to formal education and by motivating them to improve their qualification according to the individual learning needs.

(Take a look on the website [www.vdu.lt/tima-balt](http://www.vdu.lt/tima-balt))

##### LABORATORY OF EDUCATIONAL INNOVATIONS AT KAUNAS UNIVERSITY OF TECHNOLOGY

Kaunas University of Technology has established the Laboratory aims at contributing to the creation of the information society in Lithuania through the development of educational innovations by accomplishing the functions of research, teaching, consulting, expertise and new knowledge dissemination. Fields of Activity:

- Analysis of progressive experience in foreign and local educational innovation implementation;
- Creation, adaptation, implementation, and setting of educational innovations;
- Accumulation of educational innovations bank;
- Enhancing school and teachers’ possibilities in the use of educational innovations and their implementation in educational process.
- Link website [www.ktu.lt](http://www.ktu.lt)

### STIMULATING SCHOOL TEACHERS TO CREATE AND SHARE INNOVATIONS (MICROSOFT PARTNERS IN LEARNING CUSTOMER REFERENCE)

Education Challenge Lithuania's Centre of Information Technology of Education, being a part of the Lithuanian Ministry of Education and Science, is responsible for investing in technological infrastructure and providing hardware, software and information technology training to primary and secondary schools in Lithuania.

At a meeting of Lithuania's Partners in Learning advisory board, the Ministry decided to endorse a project to find out how its investment in information technology has affected the practice of teaching and learning in the country's 2,000 schools. Another aim of the project was to make it easier for teachers and schools to adopt innovative teaching practices, by finding and publicising examples of successful, interesting and creative uses of technology in the classroom.

In 2004, the Minister of Education and Science launched a competition for all of Lithuania's primary and secondary schools. They were invited to submit entries describing innovative teaching practices employing information technology.

Microsoft provided a Microsoft® PowerPoint template called the Virtual Classroom Tour. The template was translated into Lithuanian and all entries were submitted in this format. By filling in the template, teachers provided enough information about a classroom project so that others could assess its value and success, making it easy for other teachers to repeat the project.

A total of 221 entries were received from 100 schools around Lithuania, representing the work of 193 teachers. They covered all age groups and a wide range of subjects, from music, art and ethics to mathematics, languages, biology, physics and history.

Subject experts selected by the Ministry assessed all the entries. The top ten projects, representing the work of 17 teachers, were recognised at Lithuania's first Innovative Teachers Forum on 7 April 2005. Most importantly, 177 of the entries have been published on a Ministry web portal, so that they can be accessed by teachers around the country and used to inspire further innovation in teaching and learning.

Link website: <http://metodika.emokykla.lt/default.htm>

#### 4.4.- Best Practices in SPAIN to encourage the competences and skills linked to innovation

##### CEIN – CERN

##### EUROPEAN CENTRE OF ENTERPRISES AND INNOVATION OF NAVARRA

The European Centre of Enterprises and Innovation of Navarra (CERN) is an instrument of the Government of Navarra in the service of education, SMEs and entrepreneurs, which aims to consolidate and diversify the industrial and economic fabric of the Community. Encourage entrepreneurship, identify, promote and develop business projects and drive innovation in companies in Navarre.

CERN is involved in a European philosophy, both in the methodology of work and in constant search of innovative services and in identifying new business opportunities for business or economic development projects in collaboration with other regions of the European environment. Through different projects attempt to bring the entrepreneurial skills and initiative. Thus, through the Science and Technology are working on business skills in primary and secondary or familiar to students of Vocational Training and University courses in the world of entrepreneurship and the option to create a company as output real professional and feasible

Educate with INNOVATION in the centers.

They offer to the vocational training centers a training context in the classroom through three courses of action:

- **Guiactivas.** Teaching materials for the classroom. The Guiactivas are didactic materials that are intended to bring the entrepreneurial culture and entrepreneurship to students of higher vocational education (primarily). Also enable them to discover their entrepreneurial skills, where innovation plays an important role.
- **Business Ideas Competition .** Through this contest, they reward initiative and the capacity of VT students to develop a business plan, from the origin of the idea to the analysis of their viability.
- **Simulated Enterprises.** The methodology of Business Simulation consists on the implementation of a business organization which organigram is formed by the students and the teachers. To do this, we need a physical space, equipped as an office, in which students develop their actual practice in business management.

### TKNIKA

Urrats bat is a program promoted by the Deputy Ministry of Vocational Training Department of Education, Universities and Research of the Basque Government and coordinated by TKNIKA to assist VT students in creating their own business.

Urrats Bat chooses to convert the centers in business incubators. In each of the centers have the help of promoter properly equipped and available for free use. Each center has a person that performs dynamic awareness and business projects. With the help of outside consultants is set as a strategic objective the creation of a company promoted by the school pupils in each school year. It addresses to:

- The second-year students of vocational training centers and upper medium grade.
- Ex Alumnae
- Anyone who has a connection with the Centre through non-formal training courses

Educate with INNOVATION in the centers:

- Learning to learn generates not only knowledge but also a motivational attitude towards life experience, higher cognitive structures integrating metacognition, or knowledge of knowledge, reflection, self-assessment of learning and the construction of it significantly.
- Teach to think has become one of the best thinking strategies that teachers can offer their students to achieve not only the autonomy in the implementation of homework, but also the development of a constructive, intelligent and critical thought and the personal initiative in the process of teaching and learning.
- Strategies for Motivation: As a West Morris said: "The example is a lesson that every man can read" and are therefore, as teachers must teach content through strategies that work the student motivation to learn and go beyond.
- Motivation Strategies: As West Morris said: "The example is a lesson that every man can read" and therefore, as teachers must teach content through strategies that made students work and generate motivation to learn and go beyond.

## 5.- LESSONS LEARNED FROM THE ANALYZED EXPERIENCES TO REACH THE TRAINING INNOVATION OBJECTIVES

Innovativeness in teaching is challenging. How to create trustful environment where new ideas and thoughts can come up? Furthermore, how to support individual abilities and competencies in promoting innovativeness and exploit cooperation and team work at the same time? However, innovativeness can be seen as result of versatile learning where teachers, cooperation and environment have own important roles.

One useful aspect to promote INNOVATION while we are teaching is to use Internet. Finland is good example of country which is exploited Internet as a working environment and also schools are using more and more Internet in teaching and learning as well. In general, web-based learning environment offer new teaching methods to develop students' abilities and to develop as a teacher as well. Aspect that needs more attention is supporting innovativeness after education. From basic education to higher education self-development is noticed but after education there is need for more supported actions. There companies are playing a big role and they should understand the meaning of lifelong learning within individuals.

Summarizing and after having analysed all the good examples of practice, as well as the policy plans and forecasts, some of the recommendations can be formulated:

- Analyse the needs of the certain target group, regarding what kind of innovation is required and urgent at the certain stage of professional activity;
- Initiation of continuous research on good practices of creating / transferring innovations;
- Involvement of education policy makers into any activities (even though initiatives in institutional level), regarding implementing innovations into education and training processes;
- Establishing networks in various professions (teachers in our case) for communication and sharing their experiences;
- Establishing Centres of Innovation in teacher education institutions, which could organize various types of training sessions, seminars and conferences in the field of innovations in education and training;
- Establish e-networking platforms for those, interested and/or practicing implementation of innovative tools and methods, developing innovative materials in the education and training processes.

In conclusion, to generate an innovative environment in teaching is difficult but step by step we must look for achieve some little things in order to generate it. Besides, it is very difficult to know which are the proper skills an abilities that are necessary to be an innovative person and the proper time to get it; how to generate a trustful environment where ideas, concepts, thoughts, ways of doing things can come up?. How to generate an attitude to work as team, when our society promote individuality?. However, if we realize the importance of the teachers' roles, the importance of working all together defending the same key aspects, we use ICTs, improving our learning methods and son on, it's sure we achieve an innovativeness environment., besides new technologies can help us to generate this environment. Europe is taking care of the innovation concept overall in the professional field, but in the educatinal field, although we have improved a lot, we still have many things to do.

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