Tuuli Mirola (ed.)

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FOREWORD

In Saimaa University of Applied Science, one of our focus area is internationality. We have arranged an annual International Week here in South Eastern Finland in the cities of Lappeenranta and Imatra for many years. This year, the theme of the week is "UPDATE 2017 on Higher Education".

We hope that during the week many leaders and professionals of higher education will have fruitful collaborations and will have great possibility to tighter interaction via professionals. As a result of this, a joint publication has already been made.

The development of cooperation is particularly supported by the opportunity to create networks and to share experiences and information. This is the kind of collaboration we hope will successfully continue in the future as well.

I believe that the articles in the publication you are now seeing will evoke rewarding discussions among our universities' staff and contribute to opening several new doors into the ever-changing and developing teaching work and education-related collaboration.

Merja Heino
Vice Rector
Saimaa University of Applied Sciencies

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Boosting Innovative Culture in University – Skinnarila Spirit Story

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Abstract

Innovative culture in a university is not self-explanatory, and regardless of the disciplines and faculties it has, innovative working culture can grow and flourish or not. It is mainly depending on the people in the organization. However, there are some actions the organizations can do in order to boost and support an innovative working culture. This article is a story from Skinnarila campus.

Keywords: Innovative culture, university facilities

1 Introduction

Saimaa University of Applied Sciences has been during its history focusing on high quality education and student guidance. Another strong focus area has been international activities and networks. These efforts have provided a strong foundation and good operational results among the Finnish universities of applied sciences. Research and development volume has been quite small, but it has grown in recent years, resulting from organizational efforts in it.

Until 2011 the university operated in several campuses, since then only in two. When each faculty was located in it's own campus, the innovative activities were focusing on faculty level. It would be unfair to claim that the innovativeness was low then, but the good practices and innovative initiatives did not spread well through the organization. Using joint seminars and other forums to exchange ideas did not connect to daily working, which meant that cross-disciplinary co-operation was not very common.

After joining all operations in Lappeenranta into Skinnarila campus, the physical distances between people in different faculties almost vanished. This story focuses on the changes in the innovative working culture and cross-disciplinary co-operation, that have happened after the 2011 campus move.

In the following chapters, several concrete examples exhibit the areas where innovative culture has developed. The discussion highlights Saimaa University of Applied Sciences, both from input and output point of view. This paper concentrates on practical results and activities that have enabled or supported them. It does not aim to be all-inclusive, nor theoretically oriented.

2   Merging campuses

Maybe the biggest single strategic change that has affected the working culture was to merge all university premises in Lappeenranta together in the same campus with Lappeenranta University of Technology (LUT). A new campus building connected to existing LUT buildings with a bridge, provided a totally new situation. Not only did it join Saimaa UAS people from different faculties, but it also joined personnel of two universities together.

Office spaces as well as classrooms partly exist side-by-side, and students, teachers and other staff regularly meet people from both organizations in the corridors. Lappeenranta academic library was established at the same time, including all materials of the two universities under one roof and organization.

The campus offers several canteens and cafeterias in the area, and this may be the most active issue in bringing people together. The personnel lounges in the canteens are under-sized compare to the potential amount of customers, which means that you cannot always choose an empty table for lunch or coffee. Even the silent Finns start talking over the lunch or coffee table, which initiates new contacts, joint interests and ideas for co-operation.

3   Laboratory co-operation

Technology laboratories in Skinnarila campus are operating in the same area, next to each other. This has started a practice-driven co-operation, where skills, machines and tools are used in joint projects, but also utilizing each other's' special knowhow. As workloads in laboratories vary during the year, the co-operation offers a balancing element both ways. Laboratory co-operation has also been one key element in innovation commercialization projects.

Again, the key point in initializing the co-operation is the physical closeness of the premises. When people see and meet each other daily, the communication is natural instead of instruction-driven. In addition, the daily level co-operation has not been limited or restricted in any way, so it has created a bottom-up collaboration culture. One fact supporting the claim of close co-operation is that the laboratory personnel of the two universities spend their coffee breaks together. As coffee is one crucial component of job satisfaction in Finnish work places, the coffee break choices highlight the working culture very clearly.

The laboratory co-operation will be even closer in the future, as the current plan is to merge all mechanical engineering related laboratories in the campus into one. This means joint usage models for machines, tools and spaces, but also locates the personnel in shared rooms. The laboratory personnel themselves created the master plan for this.

4 Scientific research and applied development

Finnish dual university structure includes research universities and universities of applied sciences. This dual system also give the universities their natural approach to R&D area. Research universities' research work results to new knowledge, whereas universities of applied sciences' role is to apply the scientific results into practical and commercial format together with the business and other utilizing organizations.

This structure has also affected the funding organizations' and programs funding allocations for these two types of universities, and for example, Finnish Funding Agency for Innovation (TEKES) and Academy of Finland are mainly funding research projects from research universities. Universities of applied sciences utilize EU Regional Development Fund and EU Social Fund types of funding sources for their R&D projects.

Commercialization of technological innovations requires scientific research as the basis. However in order to achieve the commercial stage, it also requires practical development and design, especially when discussing novel machine concepts or other similar physical technological products. The first concept drawing is hardly

ever the final structure that can be manufactured on commercial basis. The process also requires pre-commercial work like market studies and competitor analysis, and these do not require nor provide scientific level knowhow.

Since starting to operate in the joint campus, Saimaa UAS and LUT have been stronger in innovation research funding. Additionally, Saimaa UAS has been the only university of applied sciences who has been continuously increasing it's TEKES funding during the last five years. Currently, TEKES funding represents about 40 per cent of all external R&D funding. This is a result of joint work in all phases of R&D projects; from idea building to application and implementation.

Commercialization related projects are not the only mode of joint R&D between Saimaa UAS and LUT. The cross-disciplinary co-operation has initiated surprising combinations, and furthermore very interesting projects. One example of these combinations is a set of projects where creative knowhow and thinking are merged with hard technological science and process thinking. These projects have joined fine arts, laser technology and industrial management specialists with business organizations in a very productive way.

5 Finally

The Finnish university landscape has currently several mergers or other kinds of organizational co-operation processes going on. All of them are strategically driven, targeting to strengthen the universities as well as produce synergies from joint administration functions. Most of them have decided to start the implementation process from the top, describing rules and formats for co-operation. This approach is easier to control and measure, but leaves the operational level to the final stages.

Skinnarila campus story has also started from bold strategic targets and has required management decisions and administrative changes. At the same time, however, the operational people have been given the freedom and opportunity to find new ways of doing their work, without designing first formulas, hierarchies and decision-making structures. These have later been developed according to practical needs. The Skinnarila model is not bottom-up, nor top-down, but more

like a seeding platform model. Several other universities have benchmarked this Skinnarila spirit, as the results prove that it is productive.

There are three main points in the Skinnarila spirit story; the first one is that the management must have bold strategical targets and courage to act towards them. The second point is that joint physical spaces create natural meeting points for people, and these spaces should be under-sized. The third point is the support for freedom to plan and operate for the people in all levels of the organization.

It is easy to kill the innovative spirit with too much regulation. Providing a platform for the innovative seeds to grow can bring unexpected results, exceeding the expectations. The flowers on the platform might have surprising colours and shapes, but they grow. This has happened in Skinnarila.

Improving the potential of the modern university as an instrument of its development

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Abstract

The article discusses the requirements of the contemporary period, influencing on the development of the higher educational system in a world and in the separate country integrating in the international educational market. These requirements are related to changes in the global economy that increase the demand for technologically advanced production and, therefore, for workers. In this regard, all the modern universities should be more actively to improve their educational and training programs. At the same time the increasing the share of technological production leads to release of a significant part of employees and their transition to the service sector of economy. This entails the changes in the service sector, which also requires the adequate response from the system of higher education. The actions in this sphere should be fulfilled by the universities and by the state not only for addition funding, but also for the revision of the whole system of management of national education. They should be aimed at the increasing the share of education in GDP and the raising the level of competitiveness in the international educational market. The new global challenges require universities to implement new educational technologies, to widely use the opportunities of the Internet as well as conduct research and support professional development of teachers. It forms a growing demand for the strategic instruments to enhance the capacity of the University. Thus, one of the most important tasks of the modern University is to develop its potential for all its components. In this article it will be considered these components for identify the factors and tools, practical using of which can improve the competitiveness of the University in the national and global market of educational services.

Keywords: educational market, labor market, globalization, potential of the University, key competences, management of the University.

In the development of new directions in the theory and practice of management of education it is necessary to take into account the major global trends, not only in economy but also in a social sphere.

Talking about the economy, we have to mark the undergoing fundamental changes under the impact of new technologies and requirements. Moreover, this

process is not unique and relevant only to the modern period. So, in a history of Europe it was a period when a significant part of farmers quit the land and moved into cities for factories – it was a consequence of the emergence of new mechanisms improving the productivity and releasing large numbers of workers. In the next stage, a similar process has already occurred in the industry. And now we can see a new stage - the displacement of people from the industry. Under the influence of scientific and technical progress the technological level of production increases, as well as the level of knowledge and education of employees. The workers move to the service sector, as a result, new labor market forms [5]. It promotes to forming a new market of education, especially - higher education. Today all these processes are influenced by the Internet, determining with a new force a life of a single person and humanity as a whole. Thanks to the Internet we can see a progress in production process, including the manufacturing and consumption of technically complex goods, perfection of system of distribution and services. Also there is a change of requirements to producers and consumers. They must be more educated, be open to new knowledge and experience and also they must use new tools, including those that give the Internet [4]. It should be provided by new educational system.

In the conditions of globalization the universities play a complex role associated with education an "innovative" person. It implies not only a constant process of preparing modern training programs, working out a different set of disciplines and technologies, but matching teachers to the new perspective requirements. In accordance with this principle, the work on improving all types of activities of the University (educational, pedagogical, research, managerial, international) should be unbroken.

All these spheres are closely connected with each other. It determines a necessity of search an integrated approach to create a potential of the University. This potential forms on the basis of investments in education and increased government spending on this sphere. Only in this way we can improve the quality of education and make it adequate to the demands of globalization, ensuring the further development of the national economy.

Considering the share of education in GDP in the EU, we can see among the leaders such countries as Belgium (7.2%), Cyprus (6.9%), Portugal and the UK (6.2%). The same indicator in Russia is quite modest: 3.0%. While in Russia the proportion of people with higher education is very large: 54%. (We have to note that people with higher education a lot not only in Russia but also in Canada – 51%, USA – 42%, Netherlands – 32% [9]).

For Russia a large share of people with higher education diplomas, indirectly indicates the contradiction between the number of higher educational institutions and their contribution to the country's GDP [7]. In this regard, a very actual task for Russia connects with improving the educational system towards the development of innovations and openness to the world market of education. The offers must include such educational programs that would be interesting not only to Russian, but also foreign students.

The solution of this task requires improving the management of educational system at the state level and at the level of universities, as well as changing the system of financing of higher education. Now the share of the state expenses on education is 3.6% of GDP. This indicator should be increased to the level of 4.0-4.7% to 2025 [8].

Estimated changes must relate to ability of universities to take into account the interests and needs of groups of population with different ages. It means the necessity of considering a long-term trend of population ageing. According to Russian statistics, one in five workers in the country today is over fifty years. In these conditions all the employers will use the experience and knowledges of pre-retirement (and even retirement) age workers and increase their level of education, making it adequate to the current economic situation. It will support the level of competitiveness of such employees in the labor market through a combination of their skills, experience and education [6].

In the present, when the human activity increases with each new decade, we need to use the abilities of workers in young, average and senior age. A work for the modern man is not only a way of earning money for purchasing goods and services, but a tool to fulfil the extensive needs in the physical, social,

psychological areas. It has become a necessary component of our social and psychological health and comfort and self-respect in family and society [3]. In accordance with such understanding of the work in the conditions of globalization we have to build the system of higher education and organize its development and management.

The modern Russian practice shows that our citizens are very positive to people with higher education. The employers also generally prefer to hire people with higher education, even the work is not intended that. It means that the universities need to adequately evaluate the changes in the labor market and in the world educational environment taking to the account all new trends in the national and global economy. In accordance to the rising demand from the students, employers and the state it should be provided a high level of capacity of higher educational institutions in the frame of its qualitative and quantitative characteristics.

A lot of modern theoretical and practical views on the potential of the University interpret its ambiguous, highlighting the particular aspects of this category. It seems appropriate to understand the potential of the University as a set of resources that allow it to develop and ensure its competitiveness in the educational market (both national and international). This suggests the presence of the aggregate of qualitative and quantitative characteristics of separate indicators making up this potential.

In relation to the particularity of the separate University, based on the available specificity of production and consumption of educational services, its potential should be seen in four important aspects. They can also be understood as sum of conditions for effective realization of the existing capacity.

First. The potential is realized through the using of all resources, both economic and non-economic, giving the University an opportunity to function and also constantly evolve.

Second. The potential, primarily, should be oriented on the process of development and secondary - on the implementation of current tasks. At the same time there is a direct relationship between the formation of the potential and

the operation of the quality management system of the University from the position of the process of continuous improvement.

Third. The potential includes not only existing elements, but also those that remain in reserve and can only be applied under the certain conditions.

Fourth. The potential requires constant work on its development and expansion by a way of inclusion into its orbit new human, material, intellectual, technological, innovative, managerial and financial capabilities.

The total potential of the University, as well as any economic entity, consists of many constituent elements and subsystems, which can be ranked in a level of importance. In our opinion, the major component of the total potential of the University is the human (personnel) potential. It demonstrates the main competitive advantages of the University, which are in the aggregate level of training of the teaching staff and researchers, their pedagogical excellence and involvement in work and cooperation with colleagues and students. Derivatives from this are the many important components of total potential of the University: willingness and ability to preparing innovative teaching materials; improvement of teaching process in different disciplines; developing new programs; expansion scientific research and much more.

From the standpoint of quality management it is very important to identify the factors providing the development of the University. These factors present a definite combination of structural elements forming a mechanism ensuring the high level of competitiveness of the University in the national and international educational space [2].

In the process of determining these factors we must consider the scale of the University and its niche market identity. So, in the major universities the priorities will be connected with partnerships between their structural divisions and other universities for the fullest possible using human resources and research capacity. This approach shows the productivity of the synergetic effect, when teachers and researchers working in different departments, laboratories and faculties, operate in a frame of common idea. It can provide a lot of competitive advantages of the University in the educational market.

The factors that provide the competitive advantages of the University can be presented as follows:

• the factors providing the competitive advantages long-lasting nature. Their specificity is the next: they are difficult to duplicate and reproduce by competitors. These group of factors include: atmosphere prevailing in the University; the nature of the relationships among teaching staff, departments, laboratories, dean's offices; the system of training, including postgraduate and doctoral studies; the system of development programs and educational courses, techniques and methods of teaching, etc.;

• the factors providing the competitive advantages in the short term. In contrast to the long-term factors, they can be quick and relatively easy reproduced, "borrowed" one institution from another. These include: the system of management; the composition and nature of subordination of structural divisions, providing educational process and scientific research; the system of student government, etc.

The presence of the above factors does not necessarily mean obtaining the desired result. Among the various theoretical and practical approaches to provide the good result, there is one, slightly undervalued (in our opinion). We are talking about a theory named "the concept of key competences". Its essence, in relation to higher education, can be formulated as the achievement of the University's "intellectual leadership" in the occupied market of educational services through the creation and implementation factors, hard duplicable by competitors - key competences [1]. Their structure can be represented as follows:

1. Holders – teachers, researchers and leaders of the University having appropriate education, knowledge, skills, abilities and motivation for their formation and practical application.

2. Terms – motivation of competences holders in their future development; interest of the consumers of educational services; increase the moral and financial compensation for the implementation of key competences.

3. Infrastructure – creation the susceptibility to the use the key competences; providing the technical and informational equipment of the University for teaching, research and their practice approbation.

The nature of these key competences allows use them as the object of managerial influence in the system of current and strategic management of the University. The creating an effective system of management in the University on the basis of key competencies will significantly improve the professional level of its graduates and provide the integration of different areas of University activities in the total process.

Thus, the expected result of such actions would be the formation the powerful, constantly improving potential of the University. It will be an instrument supporting a quality performance of tasks by all the participants of educational market. In the terms of globalization it will be possible due to creation the new, innovative type of thinking and human capital enhancing the competitiveness of domestic educational sphere in the internal and external market.

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New Tendencies in Higher Education

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Abstract

The purpose of the study is to reflect concerns and suggestions of practitioners involved in conducting higher education programs. The article deals with the new higher education prioritization. The key abilities such as critical thinking, problem solving, communication and collaboration skills, creativity and innovation are discussed. The industrial economy based on manufacturing has shifted to a service economy driven by information, knowledge, innovation and creativity. The rewards of the process of program prioritization could empower the institution to put resources behind the key objectives and make more secure financial future. The universities should also rethink the investments in employees training and development. Higher education should enhance its contribution to the development of the whole education system through improved teacher education, curriculum development, educational research and tangible objectives. This essay provides an outline of the major challenges facing universities throughout the world, new goals are to be incorporated to curriculum as well as studies on multiculturalism and diversity.

Keywords: higher education, prioritization, efficiency, investment

Today as never before, meeting our society's challenges demands excellence. Reinvigorating the economy, achieving energy independence with alternative technologies and green jobs, and strengthening our health care system require a skilled populace that is ready for the critical challenges we face. Countries see education as the key to economic development. In particular, education is seen as a key driver of national success. Education is also seen as crucial to modernizing society and competing economically. As a result, education is on the agenda and a top priority in many countries. Many European countries think of 21st century skills and focus attention on critical thinking, collaboration, creativity, and communication. Such skills are about thinking and problem solving, not rote memorization. Now people consider social connections as the thing that makes people happier. The quality of the relations really matters and the life in good relationships is protective. Good relationships protect not only our bodies but the brains as well. As Mark Twain once said "Good life is built with good

relationships". At the same time all countries see the need to develop competitive future workforces. This is the reason why many countries are implementing education reforms. To develop 21st century skills and to strengthen their workforce, education reforms are widespread, with the support of government leaders and policies. These reforms include broader access to education, changes in curriculum, use of tools and technologies, and rethinking how teachers are selected, trained, and assessed. There is widespread consensus, however, that our education systems are failing to adequately prepare all students with the essential 21st century knowledge and skills necessary to succeed in life, career and citizenship. Three significant competitive realities underscore why the education systems are due for dramatic change: 1. European tertiary schools face two student achievement gaps. For the past decade, many European countries have focused nationally on closing achievement gaps between the lowest and highest-performing students, and between the poorest and most affluent. The results of the Program for International Student Assessment (PISA) are really economically significant. Countries that do well on PISA, which measures 21st century skills such as critical thinking and problem solving, have demonstrated higher increases in GDP growth than countries that do not, according to a series of studies by Stanford University researchers (Partnership for 21st Century Skills 2008). Businesses don't feel that many students enter the workforce with skills related to non-routine thinking and solving complex problems. An unintended consequence of progress in closing national achievement gaps has been a lack of attention to the global achievement gap— and to the growing competitive demand for advanced skills. 2. Fundamental changes in the economy, jobs, and businesses have reshaped workplaces and the nature of work. Over the last several decades, the industrial economy based on manufacturing has shifted to a service economy driven by information, knowledge, innovation and creativity. Today, more than 80 percent of jobs are in the service sector, which includes high-growth, high-wage and high-skilled occupations in new and emerging industries. In this new, globally interconnected economy, companies have changed how they are organized and the way they do business. Technology has supported these changes, which include flatter management structures, decentralized decision making, information sharing and the use of task teams, cross-organizational networking, just-in-time inventory and

flexible work arrangements. 3. The fundamental changes in the economy, jobs, and businesses are driving new, different skill demands. Today more than ever, individuals must be able to perform non-routine, creative tasks if they are to succeed. While skills like self-direction, creativity, critical thinking, and innovation may not be new to the 21st century, they are newly relevant in an age where the ability to excel at non-routine work is not only rewarded, but expected as a basic requirement. Whether high schools graduate plans to enter the workforce directly, or attend a vocational school, community college, or university, it is a requirement to be able to think critically, solve problems, communicate, collaborate, find good information quickly, and use technology effectively. These are today's survival skills— not only for career success, but for personal and civic quality Today as never before, meeting our society's challenges demands educational excellence. These are the skills most often cited when referring to 21st century skills. They are increasingly being recognized as attributes that separate students who are prepared for a more and more complex life and work environment in the 21st century, from those who are not.

— Critical Thinking and Problem Solving, e.g., effectively analyze and evaluate evidence, arguments, claims and beliefs; solve different kinds of non-familiar problems in both conventional and innovative ways.

— Communication, e.g., articulate thoughts and ideas effectively using oral and written communication skills in a variety of forms and contexts.

— Collaboration, e.g., demonstrate ability to work effectively and respectfully with diverse teams. The quality of work relationships is that matters. Doing new thing together; caring about the members of the team is helpful for social relationships development.

— Creativity and Innovation, e.g., use a wide range of idea creation techniques to create new and worthwhile ideas. Colleges and universities should explore their personnel policies with a view to: (1) increasing incentives for employees' initiatives, (2) expanding the scope of generalized job classification at all levels (3) examining biases within existing classification and reward systems that encourage bureaucratic behaviors. Employees are motivated by corporate social

responsibilities. The integration of social and economic improvement through social and corporate responsibility makes workplace sounder. Personnel policies could be reviewed further with a view to creating incentives for team related results. The universities should also rethink the investments in employees training and development. Greater emphasis on employee development will help the Universities train the flow of future well –educated leaders. When Universities have done a good job they should share the results with other higher educational establishments and the university alumni. When both the students and professors see the pride of the University they will feel greater energy and enthusiasm becomes contagious. The philosophy of leadership that the universities should follow is supposed to establish a framework regarding risk-taking for employees at all levels. The concern is to provide access to both broad general education and targeted career specific education, often interdisciplinary, focusing on skills and aptitudes, both of which equip students to live in a variety of changing settings and to change occupations. There should be a policy framework between institutions of higher education and different sectors of society to ensure new partnerships, research projects should contribute effectively into regional and local development.

New administrative approach should be tailored to the specific missions, markets, talents and resources of each university as this institution strive to flourish during changing times. The college trustees must vest their leaders with the flexibility to develop organizational forms that best reflect the specific needs and values of their institutions. The administration of the Universities should recognize and endorse the need to invest in the information technology infrastructure as an essential element of the overall research and administrative strategy. High-speed network access to every office, classroom, and dormitory room should be considered as a priority. Institutional and board leadership must annually review the vision and mission of the institution and the ways for board members to encourage it. It is important to have board members with business backgrounds and it should be seen as a part of strategic planning. Tertiary schools need financial sustainability. Even the top programs often need more resources. It is important to balance efficiency and efficacy in investments. New programs, especially multi - disciplinary programs as well as constant programs

renewal is a good response to the requirements of the 21st century. We have learned that the prioritization success or failure is largely based on how effectively the process is managed – including goal setting, enabling faculty and staff ownership of the process and its outcomes, and ensuring effective communication. More than that, institutional leaders need to make the goals of any project clear and specific. Prioritization efforts that are not driven by tangible objectives often come up short, leading to a loss of trust among shareholders.

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Smart Education for University: new trends and perspectives

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Abstract

This paper considers modern trends in the development of smart education in Universities. Various technological tools of smart education in universities are discussed. The specifics of the competence approach's application and distance formation of the training policy in High School are analysed. Author provides case of OBS Business School (Spain), where special smart platform of the distance education program is used.

Keywords: concept of smart education, technological tool, OBS Business School, High education

1   Modern tendencies in smart education

Smart Education is a concept around transformation of conventional way of pedagogy to contemporary methods using information and communication technologies.

Moreover, for ubiquitous computing, in many countries nowadays Higher Education Commission (or other governmental structure) has taken the initiative of Smart Campuses under which blanket WiFi coverage is being provided as to complement the initiative of Smart Bags, i.e. Laptop (2-in-1 detachable) computers. Following this transformational approach, the natural next step is the introduction of Smart Classrooms at each university (Coccoli M. et al, 2014).

Most of Asian and European Universities have the Smart Classrooms (Adamko F. et al, 2014). The Smart Classrooms strategy is a learning initiative that assists educators to make ICT integral to learning. The strategy is about engaging the digital generation, improving individualized learning opportunities, sparking innovation in learning, enhancing teachers' digital pedagogy and getting the best from the ICT investments. Smart Classrooms represents a focus on re-orienting

HEIs structures and business processes around individual students and their learning needs.

The ultimate objective of all these initiatives is "Transformation towards Smart Universities" leading towards "Smart Education" (Kumar V. et al, 2014).

2   Concept of smart education at University

The new challenge for the university is integrating students into the new knowledge environment to provide them access for emerging knowledge and technologies. Meanwhile universities are actively impact on the knowledge environment. The educational technologies let the learning process go out off campus or classroom.

The smart technologies should meet the increasing public demand for the high quality educational services. The approaches to education should be completely reconsidered by both the content and learning methods, including and methods of knowledge management. The important educational task is to organize students for self-learning through the knowledge search and implementation for the professional development. A shift to the Smart Education is absolutely necessary for developing countries to take an appropriate part in the changing world (Pishva D. and Nishantha G. G. D., 2008).

The smart education will allow student to use ICT in the future to work effectively. The valuable competences are becoming the collaboration via Internet, the ability to work with a large set of information. The main effect is the ability to combine the efforts of a lot of people to create new knowledge.

The implementation of the principles of Smart Education on the classical approaches to the educational content development will not allow reaching the desired effect. The new type of educational resources is necessary for smart society development.

The educational paradigm is changing from the traditional model through the e-learning to the Smart Education. The role of universities is changing from the knowledge vendor or navigator through the knowledge generator to the facilitator for students self-learning. The smart education is able to provide a new university,

where the set of ICT and faculty leads to an entirely new quality of the processes and outcomes of the educational, research, commercial and other university activities (Tikhomirov V. and Dneprovskaya N., 2015).

The important distinctive feature of the present stage of social development is the process of informatization. The innovative communication technologies lead to the emergence of a new world, as well as a serious reassessment of values and needs of the market. Knowledge today is a commodity with increasing demand. Nowadays the possessing knowledge is not enough, knowledge have to be updated constantly as well as their rate of occurrence is enormous. The amount of knowledge doubles every 72 hours. New technologies like web 2.0 influence on the increasing amount of knowledge specially in the era of the information society. These technologies become are key for delivering relevant knowledge to the students (Khan M. T. and Zia K., 2007).

Universities in some developing countries (Eastern part of Europe, Russia, Pakistan and others) provide the special model of smart education in their universities. Example of such model is presented at Figure 1.
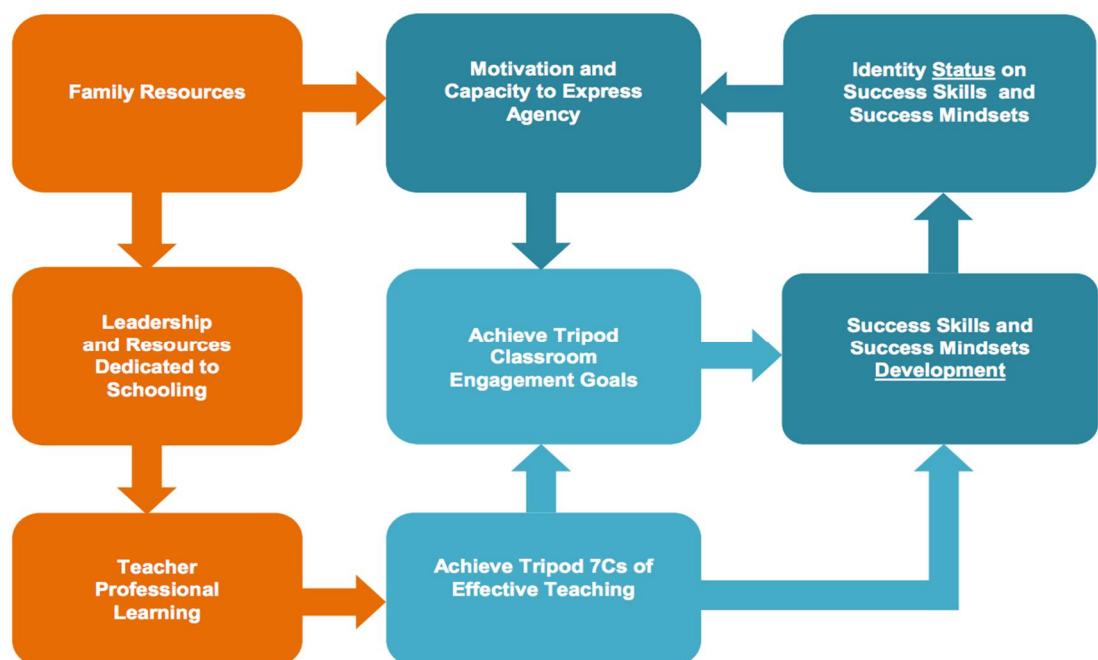
Fig. 1. Developing student's competencies in smart education.

The first digital divide was discussed around the world few years ago. A lot of countries - such as South Korea - are far forward in its technological development, and Russia behind them is not one but at least two steps (Hwang G. L., 2014). What should be done to overcome that gap? The government of many developed countries (for example, European countries) support and promote the concept of Smart in the education development either economy and society development.

The core of the Smart concept is based on three main issues:

• Mobile access. The ability to produce all kinds of services via mobile networks anywhere in the world.

The services are targeted to each user individually;

• Generation of new knowledge. There is no way for any country to develop without the access to new knowledge. There is only way based on new knowledge generation as the engine of the process of modernization of the national economy;

• Smart environment design. Despite the fact that the present level of development of computer systems does not allow to talk about the creation of artificial intelligence, though some services and technological developments have reached the point where the IT environment is almost identical to the natural intelligence. The Smart environment facilitates the emergence of innovative developments and serves as one of the basic issues of Smart economy.

3 Technological applications in smart education

Smart university and smart education are emerging and rapidly growing areas that represent an integration of 1) smart and intelligent systems, smart objects and smart environments, 2) smart technologies, various branches of computer science and computer engineering, 3) state-of-the-art smart educational software and/or hardware systems, agents and tools, and 4) innovative pedagogy and advanced technology-based teaching strategies and learning methodologies (Uskov V.L. et al., 2015).

Modern sophisticated smart devices, smart systems, and smart technologies create unique and unprecedented opportunities for academic and training organizations in terms of new approaches to education, learning and teaching strategies, services to on-campus and remote/online students, set-ups of modern classrooms and labs. The performed research clearly shows that smart education market, in general, and market of software and hardware for smart classrooms and smart universities, in particular, will exponentially grow in upcoming years (up to 2020).

The structure of technological cloud in smart education is presented at Figure 2.
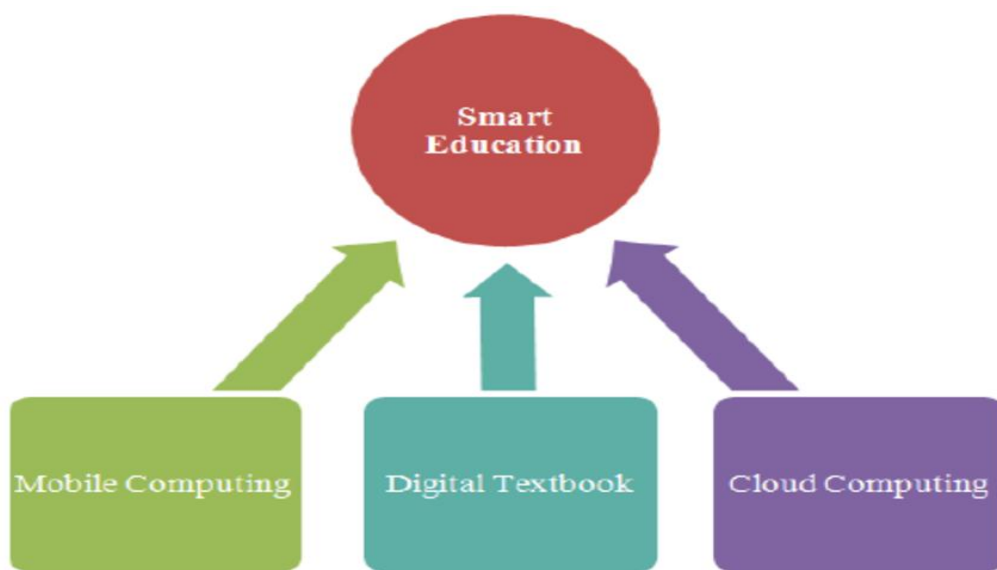
Fig. 2. Concept of technological environment in smart education.

The global smart education and learning market is expected to reach $220.0 billion by 2017 at a CAGR of 20.3% between 2012 and 2017, including

a) services segment with projected $97.9 billion by 2017 with a CAGR of 26.6%,

b) content segment - $72.9 billion in 2017, at a CAGR of 12.1%,

c) software segment - $37.2 billion, and

d) hardware - $12.1 billion in 2017 (Uskov V.L. et al., 2015).

Companies such as Ellucian, Inc. (U.S.), Smart Technologies (U.S.), Blackboard Inc. (U.S.), Kaplan Inc. (U.S.)., Promethean World Plc (United Kingdom), Pearson

PLC (United Kingdom), and Informa Plc (Switzerland) are among key players on the smart education market.

4 On-line tools for smart education: case of OBS Business School

OBS Business School is the first 100% online business school in Spain to offer online MBAs and Master's degrees in management that are designed to train executives and business managers so they can lead companies and institutions from a new paradigm of sustainability and innovation.

OBS Business School was set up in 2006 as the first 100% online business school in Spanish. It was founded along with the Planeta Group, the world leader in publishing for the Spanish-speaking market with remarkable e-learning know-how.

The main strategy of OBS Business School - to collaborate with over a thousand companies from a variety of sectors, and many of them have strengthened their collaborations through the "Collaborating Companies and Entities" agreement.

This relationship between OBS and the very fabric of business allows School to continuously update its academic programs to ensure that they will respond to the diverse needs of corporations.

OBS School has special on-line campus and provides following opportunities for students and professors:

For professors: on-line knowledge (on-line library), improved practical skills (discussion with students), material development, time-management.

For students: on-line knowledge (on-line library), improved practical skills (discussion with professors and other classmates), material development, time-management, self-management, cooperation.

On-line campus of OBS School is based on Blackboard platform (Fig. 3).

Fig. 3. OBS School's On-line platform.

This platform has different opportunities for users, which can be recognized as smart education tools. For example, professor can build his\her own course structure, upload materials any time (it is important for students) (Fig. 4), create calendar of webinars and assignments and grade system.

Such system of smart education has advantages and disadvantages for High School. If you are the user of such platform you can find among advantages good planning, open access of knowledge, well organized time-management; but otherwise you will not be able to apply your competence face-to-face, you will find limited time of discussion.
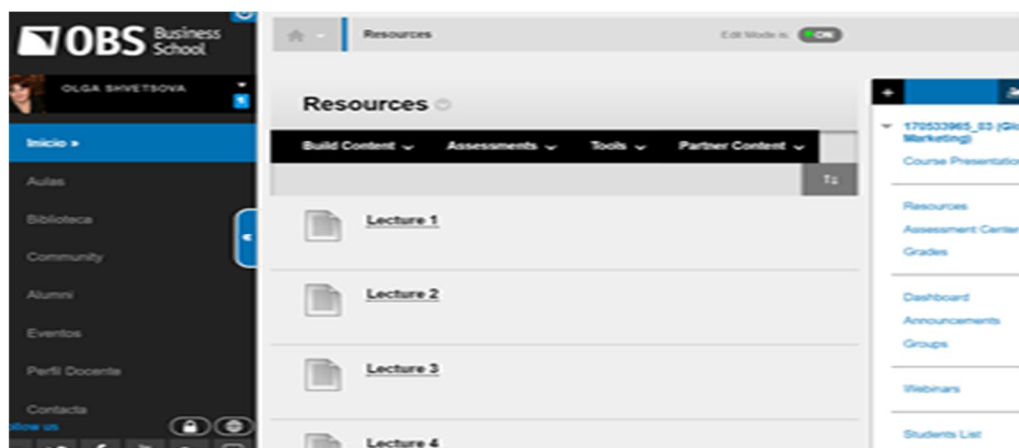
Fig. 4. OBS School's On-line platform: Resources.

Conclusion

The question, of which teaching method is better, smart classes or traditional teaching, is always baffling. Traditional teaching methods are well tested and it is the ambience where most of us have grown in. But surely traditional teachings have some disadvantages as well. On the other hand, smart classes, and high tech and new. Still, they too have their own set of limitations.

When we compare both smart classes and traditional classes, you will discover that they both have their own sets of advantages and disadvantages. For students who have just been exposed to traditional classes may find smart class learning difficult. Whereas, when we compare both on the basis of ease of learning, smart class gets the edge. There is no travel time involved. In the flexibility aspect as well, smart class is better. The students can learn at the time of their convenience. When compared on the basis of cost, both smart class and traditional class are costly (Kim T. et al., 2013). Smart classes need to spend money on electronic devices, whereas traditional classes need infrastructure to organize the classes, but it leads to competitive future and important for High Education all over the world.

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Vipunen – Education Statistics Finland
- A tool in performance measurement

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Abstract

This article represents one tool in performance measurement in Saimaa University of Applied Sciences – the Vipunen portal. The portal Vipunen – Education Statistics Finland is a reporting portal of information in all education levels and sectors in Finland. The statistics are based on data and registers of authorities, and the portal offers reports and downloadable data files. This article describes, what kind of of information the Vipunen portal offers and how does Saimaa UAS utilize the information when creating ranking lists or mining data as background information for decision making. The article also describes why the performance measurement is important in Saimaa UAS and in the Finnish HEIs in general. In addition, this article describes the developing version of Vipunen, an extranet portal which provides up-to-date information of the results.

Keywords: Vipunen – Education Statistics Finland, performance measurement, university of applied sciences

1   Performance Measurement with the Vipunen portal

There is no doubt the performance measurement is very important in all organisations in business, also in higher education organisations. When the operational environment changes quite quickly, it is important to get as much wide-ranging and relevant information as possible. It is not only important to follow organisation's own performance, but also to get wide-ranging picture of the whole operational environment. Organisations have various needs and ways, data systems and software to measure the organisation's own performance and follow the business intelligence information.

The operational environment of the universities of applied sciences and universities has changed significantly in the past years among the structural change of the field of higher education institutes in Finland and the changes in the finance of the HEI's. The finance of the universities of applied sciences in Finland is based on performance and productivity: Since 2014 there are 11

finance indicators instead of previous two ones. The finance is based on UAS's own results compared to its success in the UAS field in general. In Saimaa University of Applied Sciences obtain important business intelligence information from the portal Vipunen – Education Statistics Finland. Together with the UAS's internal performance measurement it presents an extensive view on Saimaa UAS's performance and provides with important information needed in management and planning.

Vipunen – Education Statistics Finland is a reporting portal of information in all education levels and sectors in Finland. It is provided by the Ministry of Education and Culture and the Finnish National Board of Education, and it is freely available in website for anyone. The statistics in the Vipunen portal are based on data and registers collected by the Statistics Finland, Ministry of Education and Culture and the Finnish National Board of Education. The portal offers standard and analysis reports and downloadable data files. The user can modify the contents of the reports with filters and pivot features to create reports for own needs. The reports can be downloaded in csv-format on own computer for further modification. (Ministry of Ecudation and Culture)

2 The Vipunen portal in Saimaa University of Applied Sciences

The main benefit of Vipunen is that it has a huge amount of important and relevant data in one portal. It gives an extensive view on the educational sector in Finland. The information is reliable and based on the statistics and data collection of the authorities. Vipunen is open for anybody free of charge. It is possible to utilize standard reports with ready-made graphs or make own reports by pivot features, download the datafiles and modify data further in other software. Vipunen offers information in different levels: It is possible to find out even very detailed information on specific issues, e.g. on degree level, or just see a general view on the field of education.

2.1 Rankings

Saimaa University of Applied Sciences utilizes Vipunen especially to sum up own status among the operational environment of the universities of applied sciences.

Vipunen provides information on the other universities of applied sciences with which it is possible to compare own results with the others and make rankings on different indicators. The most important are the financial indicators like amounts of degrees, indicators of study progress, student feedback, information on student and staff international mobility amounts of publications and external finance. The Vipunen portal also presents quite a good view together with the information from Statistics Finland of the graduated students' employment situation.
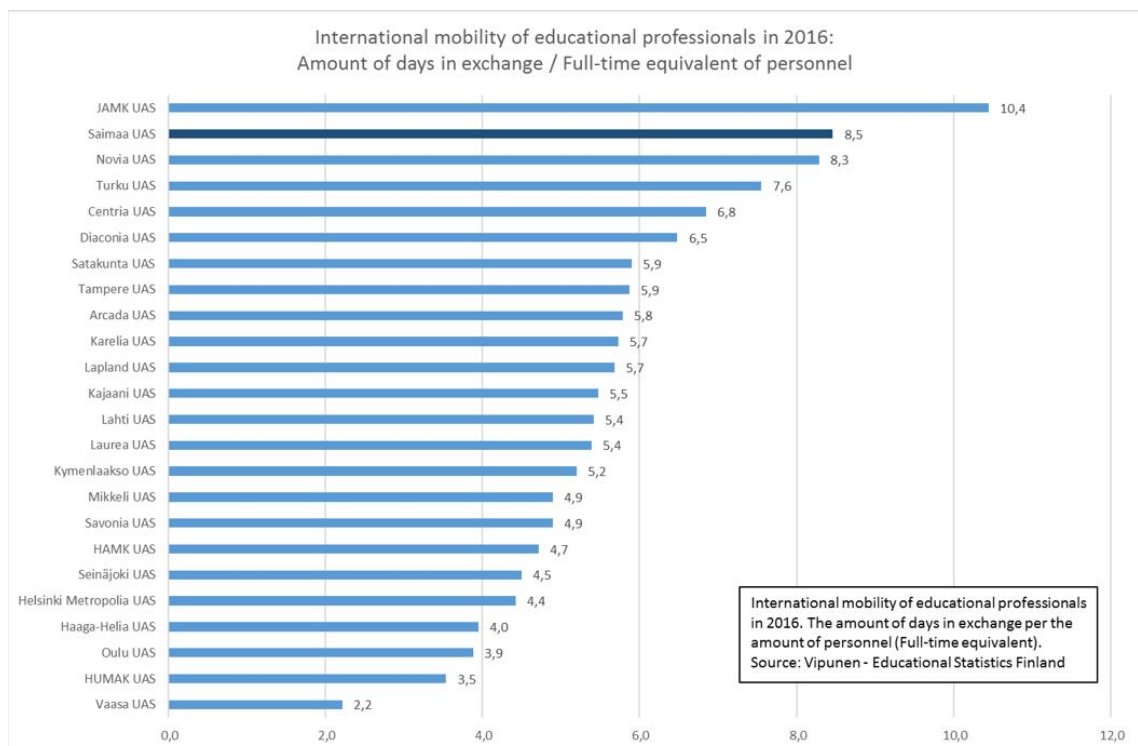
Figure 1. Example of a ranking list based on Vipunen's data

2.2 Information source

Background information on different indicators is important when making strategies, plans and decisions and when developing organisation's actions. Vipunen portal contains lots of information that benefit Saimaa University of Applied Sciences when making different kind of examinations, surveys and data collection to support own actions. After the application process in spring, for example, Vipunen produces information on the applicants and the application process as well as student's recruitment areas. There are also data on the R&D-

activities, finance, amounts of staff and student, the educational and vocational structure of the population etc in the portal. With this data it is possible to create multidimensional calculations on productivity or proportion the results e.g. to the amount of organization, staff or FTE-students.
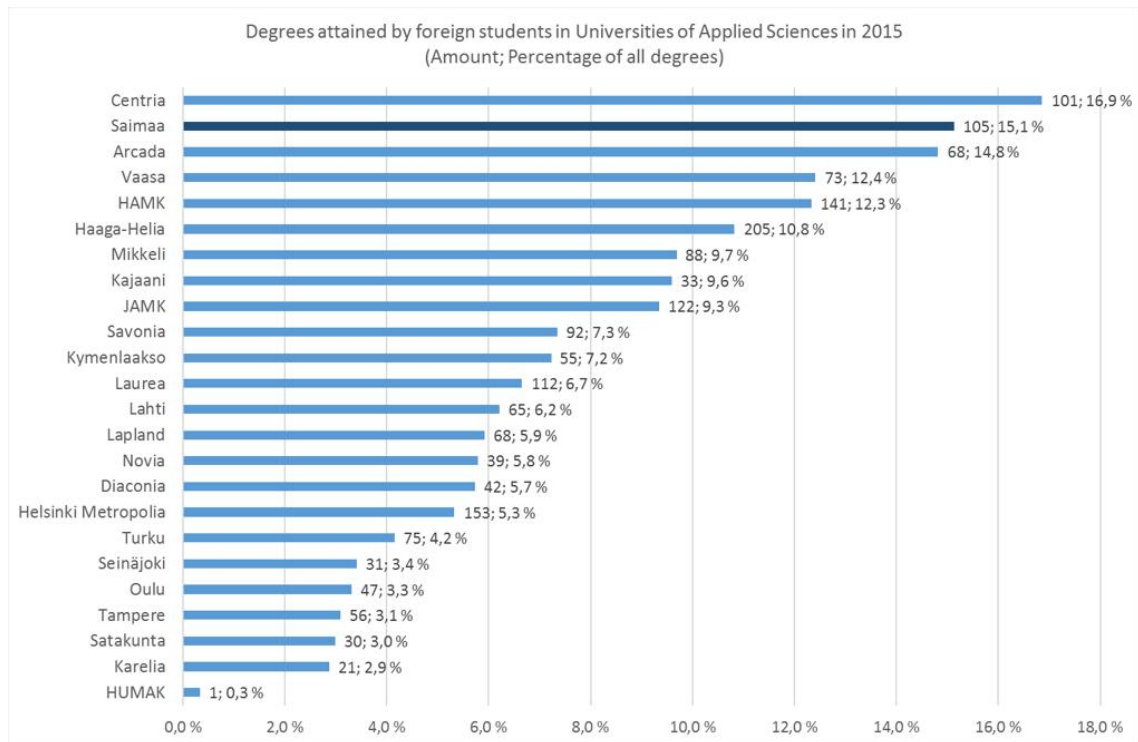
Figure 2. Example of a graphics created from Vipunen's data

3   History data – up-to-date data – future data?

The information systems should provide wide-ranging and multidimensional information for the management and decision-making. One of the dimensions is time; organization should get information on past as well as about future. The information on the past tells about the previously achieved results of the organization. It helps to plan the future. (Järvenpää etc. 2013, 39 – 43) The organization should see where it is before it can set future goals. Niemelä etc. (2008, 162 – 163) remind that the prediction information of the future is the most important and valuable: When the history data and up-to-date data help to follow the results and describe trends, the prediction information of the future helps to influence on activities and ensure the achievement of the organisation's goals.

Information provided by the Vipunen portal tells about past results of the organisations. Usually the Vipunen's data is about past years, and the data is updated when the data collection of the past year is over and all the statistics are made. The amount of staff members, for example, is collected from universities of applied sciences once a year; the 2016 data was collected at the beginning of 2017, the data of 2017 will be collected at the beginning of 2018 etc.

When measuring performance, it is necessary to get as recent information on results as possible. Often the data from the last year does not give sufficient reliable view on the performance, and more up-to-data data is required in decision-making. In addition to the Vipunen portal, there is the Vipunen-extranet which is a extranet portal for higher education institutes, which provides information on the current year. At the moment it includes data of students and studies, but the system is developed for the other indicators like publications too. This extranet-Vipunen is based on constant data transfer between HEI's, various data warehouses of authorities and the extranet database, and the data is published in Extra-Vipunen usually in about 1 - 2 weeks.

In successful performance measurement it is necessary to gather data both from the past and from the future. The latter one is quite challenging, but not impossible. With the help of the information given by these data portals and the internal measurement systems of Saimaa UAS, connected to other information sources and estimates, also prediction of the future results is possible.

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How to measure the regional impact of universities of applied sciences?

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Abstract

This article concerns the concept of regional impact of universities of applied sciences. It also represents some viewpoints to measure and assess the regional impact. Based on their strong regional role and task universities of applied sciences have an important social and regional impact. This covers the whole influence the university of applied sciences has on the environment especially on the region by means of education and RDI-activities. Defining and measuring the regional impact is not simple. It is quite a multidimensional concept, and reflects different strategies of universities of applied sciences. Surveys on the social and regional impact have been made both in Finland and abroad to define indicators to measure the subject. The article represents some indicators that Saimaa University of Applied Sciences uses to measure the regional impact, e.g. indicators of performance measurement and the enquiry to external interest groups. The article also makes some suggestions how to measure the economic impact of universities of applied sciences.

Keywords: regional impact, measurement of regional impact, university of applied sciences

1 Regional impact in general

In Finland, the universities of applied sciences are mainly regional higher education institutions whose activities highlight their connection to working life and regional development. They are tasked with providing education for professional expert tasks that is based on the requirements of working life and its development, as well as the premises for research and arts. In addition, they carry out applied research, development and innovation and artistic activities that serve education, support working life and regional development, as well as regenerate the industrial structure of the region. (Ministry of Education and Culture)

Based on their strong regional role and task universities of applied sciences have an important social and regional impact. Extensively this impact means the whole

influence the university of applied sciences has on the environment especially on the region. The social and regional impact is carried out both by education and RDI-activities.

However, defining and evaluating the social and regional impact is not that easy and simple in general. It is quite a multidimensional concept, which is differently emphasized in various higher education institutes. It depends on the organisation which elements of the social and regional impact are important. E.g. the organisation's strategy, focus areas and degree programmes as well as roles of education and RDI-activities have a high impact on what aspects of the social and regional impact are emphasised. (Kauranen, 2016)

Surveys on the social and regional impact have been made both in Finland as abroad. As mentioned in a recently made publication by Ministry of the Education and Culture, there are many perspectives to define the impact and many ways to measure and assess its results. Higher education institutes differ from each other and have different needs in measure. Actually, the lack of indicators is not the problem, on the contrary, the challenge is to find the relevant indicators and ways to assess. Also the costs of the data collection against the benefits obtained by the information of indicators, the reliability of the indicators as well as the right impact on personnel are matters to consider before measuring. (Niiniluoto, 2015)

Indicators measuring social impact and regional development work are both quantitative and qualitative. This on the one hand gives wide-ranging options to measure and on the other hand make it challenging to find the relevant indicators. One proposal for defining and measuring social and regional impact is originally defined as impact of universities in Finland. They assess the university's **integration to**

- innovation (e.g. commercialization of research)

- labour market (e.g. employment of the graduated students)

- social and ecological development (e.g. services that contribute physical and mental well-being)

- regional operation environment (e.g. RDI-activities in the area) and

- conversation in society (e.g. conversation on processes of anticipation and changing society). (Ritsilä etc, 2007)

Universities of applied sciences have arisen from the demand of the regions. They aim especially to meet the needs of the working life in the area through education and research, development work and innovations. The impact of universities of applied sciences varies depending on the area. If there is only one university of applied sciences in the region, it no doubt has close contacts with key partners and decision-makers. This only one university of applied sciences is essential, even critical, when thinking about the vitality, supply of services and regeneration of the region. (Kauranen, 2016)

2 Examples of measuring social and regional impact of a university of applied sciences

In Saimaa University of Applied Sciences there are several indicators that measure and describe the social and regional impact. They are both quantitative and qualitative as well as direct and indirect. The indicators of performance also measure this sector of organisation's operations: the number of graduated students, the progress of studies, the number of students in the open university, the number of employed students, the publications and the volume of RDI-activities are examples of such indicators. Those indicators describe university's social and regional impact on the society and working life. They also indicate the impact on the students and their well-being.

Since 2009 Saimaa University of Applied Sciences has carried out every second year an enquiry to external interest groups to find out the importance and impact of Saimaa UAS. Generally Saimaa UAS is seen as a significant local operator and it has somewhat wider impact too. The education provided is found to be very significant year after year. The impact and importance of research, development work and innovations has increased.

The economical regional impact would be worth of discussion more actively. The economic importance of a university of applied sciences for the region is quite a

rare topic in conversation. The theme was studied in 2007 in North Karelia University of Applied Sciences (nowadays Karelia University of Applied Sciences). The aim was to figure out the direct and indirect economic influence, benefit and importance of the university of applied sciences to the region. Such factors as personnel's salaries and indirect employee costs, taxes, the amount of purchases from companies were taken into consideration as well as the impact to the turnover for the local companies. The amount of income effect was a little bit higher than the UAS's turnover. (Tarnanen,etc. 2007)

The Finnish universities of applied sciences are funded by tax revenues and most of the finance origins from state's budget. Also the study grants paid to students could at least partly be seen as income transfer from state to the region. In Saimaa University of Applied Sciences the basic finance from Ministry of Education and Culture was 16,9 million euros in 2016. The study grants paid by state to Finnish students were 6,5 million euros in 2016. A significant amount of study grants is spent in South Karelia.

The personnel costs are about two thirds of the all costs of Saimaa UAS. The personnel's salaries and fees were 10,3 million euros in 2016. The amount of income taxes were 2,9 million euros. There were 259 staff members working in Saimaa UAS last year. Almost every staff member lives in South Karelia, which means they spend a large part of their salaries in the region. The income taxes end up mostly into the region. The indirect employee costs (e.g. insurances) were 2,7 million euros which were mainly transferred outside South Karelia.

Saimaa University of Applied Sciences's purchases from suppliers and service providers were altogether 2,9 million euros in 2016. When estimating the regional and social impact it is significant whether the purchases are made in the region or is the money flow directing outside the region. The procurement of goods and services is regulated in the public sector in Finland by law. This districts organisation's possibilities to make purchases in its own region. A remarkable part of the purchases are such special articles, that there are no local suppliers. But when buying locally produced services, e.g. facility services, Saimaa University of Applied Sciences has a significant employing and an economic impact on the region.

In conclusion it would be useful to think the case conversely: What if there wasn't any university of applied science in the region? From the economic point of view it would e.g. in Saimaa University of Applied Sciences's case mean at least 250 lost jobs and 20 million lost euros in the region of South Karelia. In addition it would affect to the research and development work as well as innovations on the area. It would affect labour shortage and complicate the companies possibilities to find professional employees. In the long run it would complicate the growth and regeneration of the region.

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Performance Measurement – Viewpoints of measuring the future

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Abstract

This article considers the challenges of measuring the future. The performance measurement is a wide-ranging and multidimensional context. The indicators and information systems should provide with relevant data on all sections of the organisation as well as business intelligence information on the business and competitors. The performance measurement indicators should give objective and subjective information both on the past results and future. Especially the information on the future is regarded as most important and valuable for planning. Information overload is somewhat a problem and it is necessary to measure the information that really supports the organisation to carry out the strategy. The indicators should be valid, relevant, exact, reliable and credible as well as economical. In the viewpoint of management accounting and theories of performance measurement it is possible to measure and predict the future in quantities by developing the measurement systems with leading and lagging indicators. On the other hand it is necessary to consider what is relevant. The most important decisions are anyway based mostly on very soft, qualitative data based on signals, factors and forces that will reflect the world in future.

Keywords: measuring the future, prediction of future

1   Multidimensional data for decision making

The performance is defined as organisation's ability to reach its targets, in other words, ability to carry out its strategy and meet the needs of the interest groups. Human and financial resources, functionality of processes, personnel's know-how, motivation and management influences on performance. The performance measurement indicators and information systems should provide with relevant multidimensional data on all the sections of the organisation as well as business intelligence information on the business and competitors. In addition indicators should give wide-ranging information on the past results as on the future.

The character of performance measurement information is wide-ranging and multidimensional. The dimensions of the information needed in management are described by Järvenpää etc. (2013) as follows:

Objective information is based on verifiable results of the past. This information doesn't depend on the information provider's opinions. On the other hand also *subjective* information is needed. It depends on the information provider's estimates and consideration. Subjective information is often connected to the prediction and decision-making. Information of the *history* describes the past success and results. It enables the planning of future. Information of the *future* means estimates, prediction and analysis of the future prospects. Information of the future is needed to take actions that are necessary for the challenges of tomorrow.

The information of the future is the most important and valuable for the planning. The figure 1 below shows that the value of the information is higher depending on how recent the information is. The history data and real time data are of course valuable, but the prediction data of the future is the most worthy. (Niemelä etc. 2008, 162 – 163)
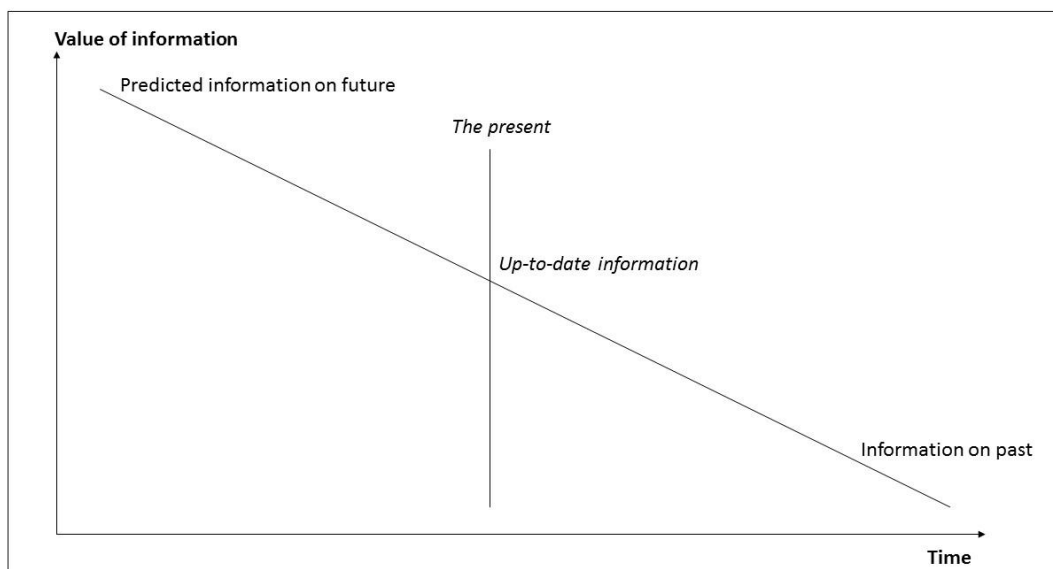
Figure 3. Value of information relative to time (According to Niemelä etc. 2008, 163)

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In real life, the information on performance is in great demand but there is also a good supply of information. Information overload is somewhat of a problem nowadays. It is necessary to select and measure the information that really supports the organization to carry out the strategy, achieve the goals, support the management and decision-making as well as motivate the personnel. Moreover according Laitinen (2003) the performance measurement indicators are required to be valid, relevant, exact, reliable and credible. Laitinen (2003) reminds that the indicators should also be economical: The costs of gathering the indicator's data should not exceed the benefits of the information. All these point of views should be considered when thinking about estimating or predicting future: Organisations should thoroughly consider what to measure now and how to use the measurement data effectively for predicting the future. Surely Laitinen's list of theoretical demands for indicators will help to decide the right indicators and at least help to limit the amount of indicators.

2   What is prediction of the future results?

Measuring the future is called prediction. It is a way to estimate what will happen in future. Prediction requires enough data of the past, observation, hypotheses of future and testing of these elements. (Vehmanen 2013, 140 – 142)

A functional performance measurement system considers the cause-effect relations of measured subjects. It is not enough to show the results but also use leading indicators to show how the final results will be achieved. (Kaplan & Norton 1996, 149 – 162). Järvenpää etc. (2013, 340) notes that cause-effect relations between indicators are usually not observed enough in measurement.

There are two kind of indicators when thinking about cause-effect relations of measured subjects. *Lagging indicators* (lag indicators) measure the results and realization of the strategic aims. *Leading indicators* (lead indicators) measure the factors that support and help to reach the final lagging indicator, in other words, they predict the realization of the strategy. (Kaplan & Norton 1996, Järvenpää etc. 2013)

3 Leading indicators in the performance measurement of UAS

The leading indicators can be based both on existing data and on estimates, and human behavior and consideration. The indicators cannot of course eliminate all the risks, e.g. something unexpected can certainly happen and cut the ground of the predicted result. Actually, there can be even several possible leading indicators for the measured subject and at least, alternative plans to carry out.

One possibility to create leading indicators is to build a system that provides with follow-up information on the measured subject and operates also as an alarm system. For instance in Saimaa University of Applied Sciences's performance measurement there is an indicator that measures the amount of students who completed at least 55 credit units during term. The indicator is a lagging indicator that tells about history or at most about present. Current information systems in Saimaa UAS actually are already follow-up systems that tell the quantity of the indicator today. The alarm system is needed to predict what the quantity will be in future. The follow-up system does not tell what courses have the students planned to complete during the semester, how have their plans realized and when is it time to react on deviations. These factors will influence on the final indicator, these are leading indicators of the lagging indicator (number of students who completed minimum 55 credit units). This point of view in prediction will set demands to software development as well. (Matikainen 2016)

On the other hand the indicator "amount of students who completed minimum 55 credit units" is a leading indicator to other indicators. The quantity of this indicator predicts the numbers of degrees but the data is not enough: The graduation of the student cannot be predicted directly from the study progress of normal studies. The graduation may be delayed because of the practical training or the thesis process. There might also be private reasons why the student cannot complete the studies in time.

4 What should we actually "measure" of the future?

In point of view of management accounting and theories of performance measurement it is possible to solve the prediction challenge by creating reliable methods to estimate the future results in quantities. This will be carried out by

correction factors. It requires efforts to create such factors that take into account possible uncertainty factors, but with reliable data on history results, trends, observations it is mathematically possible. But now the question is: Which indicators are economical? On the other words, are the benefits of measuring higher than the costs and efforts invested on creating and calculating correction factors? If it is necessary to get as exact data and quantities as possible, it is worth of modelling correction factors. Also in this case it is important to think how precise data is needed, is there any chance for margin of error.

It can be done, but is it worth that? In real life, all development requires resources (money and time), organisations goals and structures change, and old indicators can be out of date within a couple of years. When great new system is ready, all the connections to IT-programmes and databases are done, time has passed. Probably the prediction system is out of date before its first birthday.

It is quite challenging or even impossible to create mathematical models for predicting the future. The most important decisions are based mostly on very soft, qualitative data: Should we invest in new buildings (if most of the teaching and learning takes place in digital networks in the future)? What new degree programmes we should create (what kind of professions there will in 2025-2030)? Paying too much attention to objective, past, clear and nice indicators is easier than trying to forecast the uncertain future. Anyway, trying to find out signals, factors and forces that reflect the world in year 2030 is essential to make reasonable decisions today.

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Measuring the promise of innovation in the higher education

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Abstract

In many global higher education related discourses, higher education institutions hold a promise for introducing something new to the world. They don´t just possess the potential for new knowledge but also an ability to address complex societal and economic issues in engaging ways – a potential to function entrepreneurially as an organization. How should higher education institutions (HEIs) ensure their organizational ability to innovate? What counts in analytics that measure innovativeness in higher education? In this article, I view the HEInnovate approach that is a tool for HEIs to self-assess their innovation potential. The tool is was initiated by the European Commission and OECD and established in 2013.

Keywords: HEInnovate, entrepreneurial university, innovation in higher education institutions

1 Entrepreneurial university

Higher education is facing new challenges. Why do we need the concept of entrepreneurial university? One way of seeing the concept of entrepreneurial university is an effort to turn the higher education challenges into opportunities. What kind of issues should entrepreneurial higher education institutions address?

1.1 Challenges and trends in higher education

There is an ongoing debate about the changing trends and demands in the higher education. There is a consensus that the education landscape is changing, and institutions need to manage their position in their local, national and global environment. Nowadays higher education institutions often compete on a global scale. Higher education institutions face many new expectations in today´s society. They compete to attract talented students and staff. Students are aware consumers, who expect to have access to services and education, the latest tools, methodologies, technologies and more flexible delivery options. The higher

education institutions are expected to make efforts in enhancing employability and entrepreneurial skills and opportunities. There is a pressure to develop academic careers as well. Organizations have a need to develop new funding models in local, national and international environment. Higher education institutions are expected to contribute to economic growth and measure the impact of their activities. Strong partnerships and engaging modes for stakeholders are important for the quality of higher education.

1.2 The idea of entrepreneurial university

Where does to idea of entrepreneurial university come from? There has been a growing interest for seeing universities taking a pro-active role in putting new knowledge to societal and business use and being an interactive part of innovation cooperation and knowledge sharing with businesses and the wider society. However, there is no clear consensus for defining entrepreneurial university.

It is widely agreed, that there is a wide range of variety of entrepreneurial approaches in the universities. HEInnovate framework builds on an assumption that entrepreneurial university is a continuous improvement process and there is no unique approach. However a single organization makes choices when developing its strengths regarding to entrepreneurial university concept. HEInnovate framework utilizes Gibbs (2013) view on entrepreneurial university as such which is designed to empower students and staff to demonstrate enterprise, innovation and creativity in teaching, research and the third mission, its activities are directed to enhance learning, knowledge production and exchange in a highly complex and changing societal environment. In addition, to be entrepreneurial higher education, an organisation is supposed to be dedicated to create public value via processes of open engagement.

1.3 The third mission of universities

The concept of entrepreneurial university is in line with discourses about the academic third mission. The third mission of universities refers to communities engangement and the involvement in socio-economic development. Etzkowitz (1997) stated that as universities conduct alongside their research and education

also a mission to engage communities, they become entrepreneurial universities. There are many definitions for the third mission of universities, sometimes the third mission refers to knowledge dissemination, sometimes it refers to wider societal impact and communities engagement.

2 HEInnovate framework to assess the entrepreneurial university

HEInnovate framework was initiated by the European Commission and OECD and established in 2013. The aim of HEInnovate is to facilitate the assessment of an HEI in a systematic way. The HEInnovate framework is based on a large amount of approaches collected from current research. The tool has seven broad areas that individuals in an organization evaluate in relation to their own institution and an institutional perspective is collected from individual numeric evaluations, measuring the maturity of each dimension. The framework offers a description of an ideal situation in an entrepreneurial organization in seven areas.
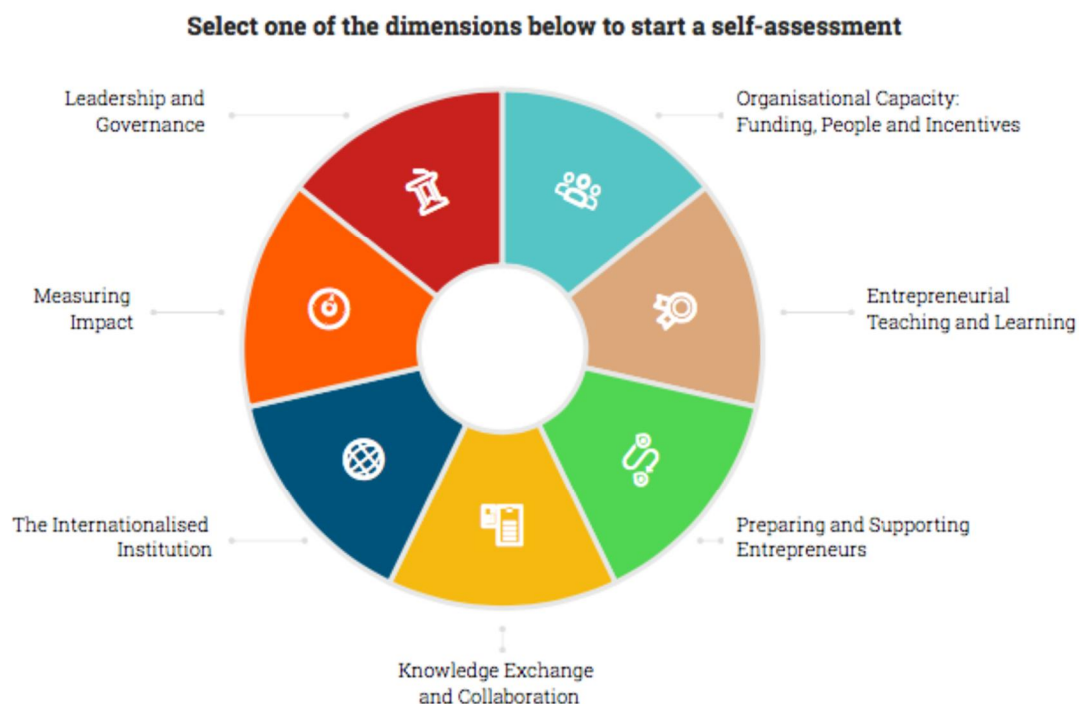
Figure 1. HEInnovate assessment is divided into seven dimensions. Source: HEInnovate tool.

2.1 The Leadership and Governance

HEInnovate framework takes into consideration the leadership and governance practices as an essential part of developing an entrepreneurial and innovative culture within an HEI. But what is seen as strong leadership and good governance in HEI approach? It highlights the dynamics of entrepreneurial agenda in leadership and governance activities. The individuals in HEI evaluate whether entrepreneurship is a major part of the HEI's strategy. They also evaluate the level of commitment to implement the entrepreneurial agenda. It is tested, do they recognize a model in place for coordinating and integrating entrepreneurial activities across the HEI. The institution encouraging and supporting the faculties and units to act entrepreneurially is included in the evaluation. The responders evaluate do they see the HEI acting as a driving force for entrepreneurship and innovation in regional, social and community development.

2.2 Organisational Capacity: Funding, People and Incentives

Ideally, an entrepreneurially organization is committed to carrying out entrepreneurial activities to support its strategic objectives, then key resources like funding and investments, people, expertise and knowledge, and incentive systems need to be in place to sustain and grow its capacity for entrepreneurship. Entrepreneurial objectives should be supported by enough a wide range of sustainable funding and investment sources. In an ideal situation, the HEI has the capacity and culture to build new relationships and synergies across the institution. The HEI is open to engaging and recruiting individuals with entrepreneurial attitudes, behaviour and experience. The HEI invests in staff development in a way that is supports is entrepreneurial agenda, too. There should also be incentive and reward system to support the staff who actively support the entrepreneurial agenda.

2.3. Entrepreneurial Teaching and Learning

The assessment covers the dimension of entrepreneurial teaching and learning. The aim is that HEI increases awareness of the value of entrepreneurship and stimulate the entrepreneurial intentions of students, graduates and staff to start-up a business or venture. The HEI should also support its students, graduates

and staff to create business from their ideas. Ideally HEI trains students, graduates in starting, running and growing a business. HEI should also offer mentoring or other forms of personal development from experienced individuals from academia or industry.

2.4 Preparing and Supporting Entrepreneurs

Ideally, the higher education institution has clear activities regarding preparing and supporting entrepreneurs. The HEInnovate approach takes into consideration does the responder recognize if the higher education institutions increases awareness of the value of entrepreneurship and stimulates the entrepreneurial intentions of students, graduates and staff to start-up a business or venture. It is also evaluated, how much the HEI supports its students, graduates and staff to move from idea generation to business creation, offers training to assist students, graduates and staff in starting, running and growing a business and mentors and offers other forms of personal development by experienced individuals from academia or industry. Other parts of evaluation covers the ability of the HEI to facilitate the access to business incubation and financing for its entrepreneurs.

2.5 Knowledge Exchange and Collaboration

Knowledge exchange is seen as an important catalyst for organizational innovation, progressive education and research and local development. Individuals asses is their HEI committed to collaboration and knowledge exchange with

industry, the public sector and society. They assess does their HEI demonstrate active involvement in partnerships and relationships with a wide range of stakeholders. Also strong links with incubators, science parks and other external initiatives are valued. In evaluation, it is seen as an advantage if the HEI provides opportunities for staff and students to take part in innovative activities with business and external environment. At last, they assess whether the HEI mixes research, education and industry or wider community activities to apply and exploit new knowledge.

2.6 The Internationalised Institution

Being international is one of the values in the concept of entrepreneurial university. Internationalization is viewed as a vehicle for communication and improvement and international dimensions should be in the design and delivery of education, research and knowledge exchange. Ideally, individuals have experiences from internationalization being an integral part of the HEI´s entrepreuneurial agenda. The HEI should explicitly support the international mobility of its staff and students and seek and attract international and entrepreneurial staff. International perspectives should be visible in the HEI´s approach to teaching and research as well.

2.7 Measuring Impact

Measuring impact inself is one of the areas evaluated in HEInnovate approach. A part of being and developing as an innovative and entrepreneurial innovative higher education institution the HEI regularly assesses the impact of its entrepreneurial agenda. Ideally, the HEI regularly assesses how its personnel and resources support its entrepreneurial agenda. One of the things to be evaluated as well is entrepreneurial teaching and learning across the institution, does HEI regularly assess teaching and learning from entrepreneurial aspect? Ideally the HEI regularly assesses how impactful is their start-up support. The HEI should also have regular means for assessing knowledge exchange and collaboration. A part of the measuring impact is a question of are institution´s international activities regularly assessed in relation to its entrepreneurial agenda.

3 Managing entrepreneurial university

Why should higher education institution use the concept of entrepreneurial university? The shared concept can develop a collective reflection and development tool to a complex phenomenon and multiple activities related to entrepreneurship. For higher education institution, it can be challenging to share same overview, identify the current situation and be able to direct the desired action as an organization.

The HEInnovate approach divides innovation and entrepreneurship into seven dimensions and gives suggestions and ideals for developing entrepreneurial university. The HEInnovate is an assessment and develop tool to manage the innovativeness and entrepreneurship in the higher education institution. There is a need to develop tools to understand the dynamics and the impact of HEIs in contributing to wealth creation.

The HEInnovate approach takes into consideration individual evaluation and institutional level. The evaluation is based on organizations members experience of the current situation. The framework can be helpful in constructing the shared, more structured reality of entrepreneurial and innovative university in one organization. The HEinnovate tools is not a bechmarking tool, but it can be helpful concept for the society of universities as well. A higher education institution has an opportunity in defining their own institutional stance in conducting their missions - education, research and the social impact.

The HEInnote is a tool for a single organization to make a complex phenomenon more visible and manageable. After all, entrepreneurial university is a dynamic process that is built from concrete goals, activities, people, spaces for research, education and entrepreneurial dimensions to meet each other.

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Research and publishing activities as a way of developing international collaborations and the University's image

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Abstract

This article presents the experience of Pushkin Leningrad State University in developing research and publishing collaborations, including those with foreign participants that positively impacts on the process of integrating the University in the international information space.

Key words: collaboration, research and publishing activities, the University's image

Integration of educational organizations in international information space is one of the key components of building a positive corporate image of the University and research collaborations.

Presently, research collaboration is a key component of the academic research infrastructure that unites the intellectual resources.

V.V. Bogatov and D.S. Syroezhkina write that development of research collaborations is a logical result of three key elements' interaction: Researcher (individual researchers and research teams), Infrastructure providing continuous operation of research teams and their ongoing projects, and State as a regulator of relations between scientific organizations and research teams.

The efficiency of reseach collaboration is measured, primarily, in terms of scientometrics. The article considers one of scientometric tools associated with research and publishing activities.

In accordance with main trends of management of HEIs, Pushkin Leningrad State University pays great attention to indicators of teachers' and researchers' publication activity. One of the tools to support the growth of these indicators is the effective contract.

Let us analyse the dynamics of indicators of publication activity in the context of the development of the scientific-publishing activities at the University and development of international collaborations in 2014-2016.

The University's research and publishing activity is implemented in two main areas: academic periodicals (academic journals) and academic non-periodical editions (proceedings of conferences, collections of scientific articles).

Pushkin LSU publishes five academic journals in seven scientific areas: "Vestnik of Pushkin Leningrad State University" presents articles in Philosophy, Education, and Psychology; "Leningrad Juridical Journal" presents Juridical Sciences; "Everyday Life History" – History; "Art Logos" – Philological Sciences; "Economy of New World" – Economics.

"Vestnik of Pushkin Leningrad State University" and "Leningrad Juridical Journal" are included in the List of peer-reviewed scientific editions, where main results of dissertation research, when competing a scientific degree of Candidate of Sciences or Doctor of Sciences, must be published in. All journals are represented in Russian Science Citation Index database and the scientific electronic library "Cyberleninka". For 3 years there are more than 250 articles to be published in the journals on various branches of scientific knowledge.

During the period under consideration 158 academic events at various levels were held at the University (see table. 1).

Table 1. Academic conferences held by Pushkin LSU, 2014–2016

Type	2014	2015	2016
International	25	29	29
All-Russian	9	11	7
Interregional / regional	2	2	0
Students'	10	18	12
Other (festivals,etc)	0	2	2
Total	46	62	50

Table 2 presents the most significant conferences held by the University in 2014-2016, and scientific areas represented in these conferences.

Table 2

Conference	Scientific area
Everyday Life History	History
Innovation development – to service and tourism	Earth Sciences, Economics
Special Education	Pedagogical Sciences – Special (Correctional) Pedagogics
Translation. Language. Culture	Linguistics, Comparative Linguistics, Translation Studies
Psychology of XXI century	Psychological Sciences
Regional aspects of lifelong learning	Pedagogical Sciences, Economics
Pushkin Readings	Philological Sciences
Lifelong Learning	Pedagogical Sciences, Economics
Environment Balance	Earth Sciences

Moreover, the University annually conducts such large multidisciplinary conferences as Tsarskoye Selo Readings, Vishniakov Readings, Yamburg Readings, Luga Readings.

Specialized academic conferences are targeted at creating the University's cognitive image, aimed at experts in certain areas of science.

Emerging research collaborations associated with conducting specified scientific events and releasing scientific journals, can be divided into two groups:

scientists participate in the conferences and publish their articles in academic journals because of cooperation agreements (preventive information);

representatives of various organisations take part in the University's scientific events and, as a result, these organisations conclude cooperation agreements, develop programmes of academic mobility and other forms of international cooperation.

Let's watch the dynamics of indicators of the University's publication activity over the past three years (table. 3).

Table 3. Indicators of publication activity, 2014–2016.

Indicator	2014	2015	2016
Number of publications in the Russian Scientific Citation Index database	967	1388	1295
Number of articles in academic journals	382	538	376
Number of articles in academic journals included in Web of Science or Scopus databases	22	18	28
Number of articles in the University academic journals included in RSCI	12	17	25
Number of publications with participation of foreign authors	7	9	6
Number of citations in RSCI	1147	1935	2379
Number of authors whose articles are included in academic journals in Web of Science or Scopus	13	12	16
Number of authors of publications with participation of foreign organisations	6	7	6

The number of views of publications for the year	25481	26558	79857
The number of downloads of publications for the year	13575	12957	18795

As one can see in the table, in 2015 the Russian index of scientific citation, the main indicator of publication activity of scientists from Russia, posted the largest number of publications – 1388, including in magazines – 538, as well as published articles involving over-foreign authors – 9 (in collaboration with 7 organizations near and far abroad). However, in 2016, the number of publications in academic journals included in Web of Science or Scopus (28 vs 18 in 2015) increased, as well as the number of authors of these publications (from 12 to 16).

Mention that positive altmetric indicators is the qualitative increase in the number of views in 2016 (53299 units), as well as downloads of publications – up to 18795.

Thus, the carried out express analysis confirmed the thesis about the significance of research and publishing activities as a factor of building a positive corporate image of the University and international collaborations.

In Search of the Middle Way:
Evaluation System in Education in Russia
Once and Nowadays

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Abstract

This 'classic' Soviet evaluation scale (from '5' for "excellent" to '2' for "poor") remained almost intact in secondary and higher school over a period of more than fifty years and it has generally continued to this day, with all its merits and flaws. After the end of the Soviet Union people's life was changing in almost every way and the educational system could not stay immune having become not only more flexible and commercialized but also much more tangled and even defocused. However the evaluation system remained a more stable part of the process. It was all shaken up in the early 2000s with the introduction of two principal things: the implementation of Unified State Examination and joining the Bologna Process. In higher school the integrating into the Bologna Process, a multidimensional and stressful procedure, has been leading to many basic changes which included, among other things, the adjustment of rating and control systems. The system of control points helps not only to keep the discipline and to ensure the continuity of the control but motivates the students as well and helps to make corrections in the teaching process for both the teachers and the students.

Keywords: educational system, evaluation system in education, scale of points

It is hard to find a facet of life in Russia that has not been seriously changed in the latest decades, and the educational system, both secondary and higher, is not an exception. As in almost any field, the changes have been quite diverse and controversial, being forced and unintended, obvious and hidden, wanted or hated, perfectly or poorly conceived and implemented. A lot of things have changed: names of institutions (following the trend to take a more "prestigious" name like 'university', 'academy', 'gymnasium' etc.), terms of study, educational programs, postgraduate options - to name but a few. Compliance with the requirements of the Bologna Process has partly cleared things up and streamlined the main direction but at the same time it made the changes more

stressful and did not smooth anything over. The evaluation system could not remain intact.

The educational system in pre-revolutionary Russia (and the structure of higher education in particular) reproduced in its basic features the German pattern. The point system with a scale of 1-5 (which officially dates back in Russia to the year of 1837) was no exception, except for the inverse order: the highest mark in Russia was always '5', not '1'.

All of it was rejected, alongside with many other things, after the revolution of 1917. All forms of examination were declared the relics of "the old regime" including entrance examinations. The main preference when entering a university or an institute was given to the representatives of the "working class" and the poorest of the peasantry and It was almost impossible to get higher education in any field in the 1920s if you had been from the family of former "oppressive class" (i.e. nobility, priesthood, the merchant class etc.). It was the time of infamous "working people's faculties" when working adults, initially illiterate, finished school in a couple of years and right after that were given the green light to enter a university or an institute. This could not last long and different experiments were run to find a proper way of evaluation. My father who started school in 1931 remembers that in the early thirties his class was divided into several "brigades" (that consisted of about five pupils each) and a task was given to the "brigade", not individually, and the mark was given to the "brigade" as well. Predictably the most smart or active pupils did all of the work and the effect of such experiment left much to be desired. By the end of the 1930s the rating system based on the scale of 1-5 was mainly restored in most of educational institutions, both secondary and higher.

This 'classic' Soviet evaluation scale ('5' for "excellent", '4' for "good", '3' for "satisfactory" and '2' for "poor") remained almost intact in secondary and higher school over a period of more than fifty years and it has generally continued to this day, with all its merits and flaws. In secondary school the teachers usually added "+" and "-" signs to a figure to compensate the insufficiency of the palette. Though having been unofficial, it worked fine with the schoolchildren, as well as additional teacher's comments like "well done!", "really?", "isn't that a shame!" etc. Mark '1'

(often paired with the exclamation mark) was given when the teacher wanted to underline the inadequacy of the result or to express his attitude to it. It was never used as an official final mark. Without having been constrained with formalities the teachers invented different ways to encourage pupils or to criticize their results. When I was in the first grade my classmates could not feel the "value" of marks yet, so in addition to '5' our teacher stamped a red star on the top of the exercise-book. After getting five red stars you were awarded with a big red car stamp. Many years later when I had my teaching practice in school the teacher of fine arts in my class gave no mark at all to one pupil saying that he had done so little that he did not deserve even a '2', and the boy sat down dissatisfied with the fact that he did not get his "well-deserved" mark "bad".

The '2' to '5' scale was so standard in Soviet times that it was used (still is, and presumably will be) far beyond educational circuit. You may grade almost everything in your everyday life with these figures, from lunch in cafeteria to the way you feel after an illness.

In higher school there was far less room for any maneuver for a teacher since "pluses" and "minuses" looked too "schoolish" there and were ruled out of any official papers. There was no mark '1' in higher school so '2' was the only grade for "poor". In fact this "bad" mark was not given as well: once a student had it officially fixed in the mark sheet it meant that he or she was automatically expelled from the educational institution. Therefore the standard situation when a student showed poor result at the examination led to a blank square in the mark sheet and implied another meeting with the professor in a few days or a "tail" for the student which meant that he or she would have another try in the next semester. Actually the university teachers operated with only three marks: 'excellent', "good", and 'satisfactory'. Predictably the 'good' mark was the most common one. Such shortage of choice made life easier in a way for both students and higher school teachers; however, the limitation of this three-step performance measurement was evident (and so far is, since the system is still in use in higher school nowadays). Alongside with the scale of 3-5 examination marks the 'classic' Soviet evaluation system in higher school comprised of 'pass' scheme with two options only: "passed" and "not passed", which implied that the credit was given

in case of any result but unsatisfactory. The scheme was (and still is) meant for the disciplines considered to be less important for the chosen specialization.

After the end of the Soviet Union people's life was changing in almost every way and the educational system could not stay immune having become not only more flexible and commercialized but also much more tangled and even defocused. State and most private schools and higher education institutions became rather independent in many ways. However the evaluation system remained a more stable part of the process (though in some private secondary schools the intermediate marks were eliminated at all in order not to "traumatize" the pupils). In my university the entrance algorithm was changed a bit to make the procedure more precise: the scale was expanded from five to ten grades, with '5' being the lowest satisfactory point.

It was all shaken up in the early 2000s with the introduction of two principal things: the implementation of Unified State Examination and joining the Bologna Process. The system of Unified State Exams (USE) that started to be introduced gradually in 2001 was meant first of all to equalize the probability to enter a higher school institution for secondary school graduates from all parts of the Russian Federation. USE (like its younger sibling State Final Certification for those who finished the ninth grade) is a standardized complex of different tests and it has been based on 100 points scale from the very start. Plenty of lances have been broken since the first implementation of USE and it has been revised and improved many times and in many ways since. It was quite difficult to standardize the tests in different subjects. Apparently mathematics or a foreign language can be adjusted for a test mush easier than literature or fine arts. The proportion of "fixed" and "creative" parts of the test has always been a ground for discussion, and "creative" parts are playing an increasingly more prominent role in the whole exercise now. The lowest satisfactory bar has varied from subject to subject and has been lowered and raised several times depending on the average result shown. Some of the methods of evaluation still give rise to doubt, first of all the so-called primary and secondary marks. The latter is derived from the primary mark (which is a simple percent of correct answers) according to the percentage of correct answers given to this particular task by all of the participants all over

the country. The lower the percentage of correct answers the higher the secondary mark in case of correct answer. The said principle looks a bit peculiar since it means, for instance, that a smart pupil is to wish to get a more difficult version of test in order to get a higher final mark and different final results may appear for different tests with the same share of correct answers.

The initial shocks of USE seem to be gone in the long run, though the 'classic' Soviet system of secondary education, then-strong and well-developed, has many difficulties in its transforming and there is no wonder that, for instance, parts of the 'classic' program in graduation class are crumpled since most of the activities are aimed at the finals.

In higher school the implementation of the Bologna Process, a multidimensional and stressful procedure, has been leading to many basic changes which include, among other things, the introduction of Bachelor's/Master's Degree system, the revision of the educational programs, and the adjustment of rating and control systems. Whilst the final evaluation scale for the examinations has remained untouched (5 to 2) the forms and methods of intermediate control have become quite diverse. The system of control points (usually three of them during the semester, different number of points for different steps, with a maximum of 100 points) helps not only to keep the discipline and to ensure the continuity of the control but motivates the students as well and helps to make corrections in the teaching process for both the teachers and the students. However the "5 to 2" evaluation scale applies to full-time students only; short-term foreign students and interns who study Russian as a foreign language get their certificates (six levels of them) with a mark rated on a one hundred-point scale.

When I had (in the now-distant 1980s) my post-graduate examination in the foreign language one of the tasks was prepared in a rather ingenious way: the examinee had a chance to look at the page from some unfamiliar monograph in linguistics in English language for one minute. Then the book was taken away and the post-graduate student had to recount the main content of what he or she had just read. Was it a good method? I found it great then especially since I caught most of my text. But now I consider it a bit one-sided: good for the agile, it could be very stressful for those who can go deeper but need more time to

concentrate. In other words, we may strive to generate an ideal testing and measurement system, even so making a relatively solid one must be regarded as a sufficient achievement.

Assessing the learning process in a research project course

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Abstract

Students in the Master's Degree Programme in the field of Business Administration in Saimaa University of Applied Sciences participate in the course Research Project during their first study year. In the course they are applying into practice the skills and knowledge learned in the preceding Research methods course. The grading of the Research Project course is based on the assessment of the learning process and progress during a real life research work. This article discusses the benefits and challenges of basing the course grading on continuous evaluation instead of just the end result of the learning by an exam.

Keywords: Learning process, assessment, grading, research project

1 Background

The Master's programme of Business Administration is based on blended learning methods including both face-to-face sessions and independent e-learning online enabling flexibility for students. As the students are studying the degree at the same time as working, the Master's courses are often integrated into development projects related to actual issues and challenges in a specific industry, individual companies or organizations.

The purpose of the article is to discuss an assessment approach where the course grading is based on the evaluation of the learning process during a real life research project. Several concepts, like evaluation, assessment, and grading, are often used in this context alternatively, but meaning may be slightly different. In this article we are using the concept assessment except when discussing the final course grading from 1 to 5.

Graduating students face expectations and pressures connected in many ways to the research and development activities of the business life (Hakala 1999, 7). Studies in the Master's degree programmes respond to these expectations by giving the graduates wide and deep skills and related theoretical knowledge needed in order to be able to work in demanding expert and leadership positions (VNA 1129/2014, 5§). Especially the advanced professional studies provide the students with the possibility to deepen their skills in applying theory into practice, their analytical skills, project management skills as well as research and development skills and social skills (Saimaan amk 2016).

These learning objectives are combined in the teaching of research and development skills in the master's degree programme in the Saimaa University of Applied Sciences. The Research module gives the student abilities in scientific thinking as well as skills for planning and implementing development and innovation projects and qualitative and quantitative research. The module consists of two separate yet interconnected courses:

- Research, development and innovation methods (5 ECTS)

- Research project (3 ECTS)

This article focuses on the assessment of the Research project course. The course integrates research and development skills learned on the first research methods course by carrying out a practical research task. The aim of the course is to develop and demonstrate the students' skills to apply research information and to use the appropriate methods in collecting research data as well as in analyzing and solving working life problems.

According to Salonen (2013, 13), research, development activities and project work can, on one hand, be defined as separate from each other without research including any development perspective. On the other hand, research and development project may have multiple different starting points, such as the need for development or change in an organization. It includes practical problem solving as well as developing and producing new ideas, practices, products or services. (Ojasalo, Moilanen & Ritalahti 2014, 19). The starting point of the research work in the Research project course most often is the development need

arising from the student's own work or employer organization. Thus, the development project serves as a bridge between studies and working life (e.g. Hakala 1999).

2 Assessing the research project

The implementation of the Research Project follows the same model (figure 1) used in the Master's Thesis process in Saimaa University of Applied Sciences.

Figure 1. The process of the Research Project

Learning is assessed in each step of the project (Table 1). Thus, the final grading of the course consists of the assessment of the whole process from the topic selection and project planning to the implementation of the plan as well as the written research report and its seminar presentation.

Topic selection	- relevance - justification
Project plan	- logic and readability - applicability - definition of the aim - research questions - delimitations - theoretical framework - choice of research method - choice of data collection method - choice of analysis methods - timetable
Implementation	- project management - data collection - data analysis - time management
Seminar and report	- logic and readability of the written report - presentation and opponent actions - implementation of the plan - research findings - conclusions - recommendations

Table 2. Contents of each evaluated step in the project

When choosing the topic of the research project together with their employers, the students are advised to connect it into their own organisation and work. The students are able to narrow down, define a clear research topic for the development project in their own employer organization, and apply their previously learned research and development skills and knowledge. Ideally, the project will create new practical theory i.e. document and model working life practises (Ojasalo, Moilanen & Ritalahti 2014, 19). In the assessment of choosing the topic, emphasis is on the relevance and justification on the chosen topic from the point of view of the company's development.

Assessment of the project plan emphasises the applicability of the plan in comparison to the aim(s) of the research. Student should be able to define the specific research questions, and also set the exact delimitations for the research project. Capability of building suitable theoretical framework with appropriate concepts and theories is also part of the assessment. Choice of research method, data collection and analysis methods and their justifications is considered in assessment process as well as setting up a realistic and manageable timetable for the research project.

In the project implementation phase the assessment is based on the management of the project and application of the selected method of data collection. Building suitable and appropriate questionnaire forms and interview questions in order to collect empirical data is essential part of the assessment. Emphasis is put on how deep and profound the data analysis is and how well the students masters the relevant data analysis methods. It is also very important that student is able to conduct the research process independently, making individual choices for the process and also giving appropriate justification for the choices. Following the scheduled timetable is essential, especially in case there is a company involved in the research project.

In the research report, the student introduces the background theory, implementation and results of the research as well as gives the potential recommendations and development suggestions for the employer organization. Assessment of the research report focuses on the justifications of the methods chosen, how the empirical part and theory of the topic are connected and

matching, how the research fulfills its aims and answers the research questions. From the point of view of the company's development task, the evaluation of the research findings, conclusions and recommended courses of action are also included. If the purpose of the research project is to act as a preliminary research, the student also reports how the results would be used as background information in the wider and more profound research or development project. Student also should be able to write a logical research report according to the given guidelines.

The research projects are also presented in seminars. The presentation and the opponent actions required from the participants are also affecting the final grading of the course. Seminars give an opportunity for the students to share their experiences, learn from each other and see different types of completed projects. Seminar presentations usually evoke vivid discussions and comments in the classroom.

Assessment scale in the research project follows the 6 levels in the Bloom's taxonomy (Table 2), even though the assessment is made by grades 0-5. Minimum requirements for passing the project follow Bloom's level III, which corresponds to grade 1. Highest grading requires reaching Bloom's level VI, which corresponds to grade 5, respectively.

Bloom's Level I: Knowledge (to remember)	Exhibits memory of previously learned material by recalling fundamental facts, terms, basic concepts and answers about the selection.
Bloom's Level II: Comprehension (to understand)	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptors and stating main ideas.
Bloom's Level III: Application (to apply)	Solve problems in new situations by applying acquired knowledge, facts, techniques and rules in a different, or new way.
Bloom's Level IV: Analysis (to analyse)	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.
Bloom's Level V: Synthesis (to evaluate)	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.

Bloom's Level VI: Evaluation (to create)	Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.

Table 2. Bloom's taxonomy (see e.g. Anderson & Krathwohl 2001)

3 Conclusions

The purpose of this article was to explain the assessment process of the study module in which Master students are studying different research methods and using that knowledge in the Research project. The focus was specifically in the continuous assessment, when students are assessed based on the steps in their individual research projects instead of the traditional examination.

Using a continuous assessment in the research project has two benefits: First, it corresponds to the practices of real life business development and research projects in which assessments and adjustments are made not just at the end of the project but during it. Second, students can get feedback, support and guidance on each of the steps of the project. Therefore, mistakes or imperfections in the preceding steps are amended before they affect the successful implementation of the subsequent steps. Students get the opportunity to test their research methods skills in a real life research project and are better able to learn from their practical mistakes.

Challenge is that assessment of this kind of project course should have equal criteria for all the students. Research projects are all different in many ways; objectives are mainly defined by companies, required and collected data should fit in each project, and timetables are different. All this should be taken into consideration, and yet at the same time make a fair and equal assessment for each student. This challenge is tackled by having two teachers participating on the supervising of the students during the process and also by the teachers making the assessment together. The assessment also puts emphasis on the generic qualities of good research independent of the differences within the context and content of each project.

Despite the challenges faced on the assessment process of this research course, the practice has proven to be a successful tool for continuous learning from the students' point of view.

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Methodological innovation: comparative linguistic culturological approach to Chinese language teaching in Saint-Petersburg Polytechnic University

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Abstract

The article discusses an innovative approach to Chinese language (as a foreign) teaching exemplified by working with first-year bachelor students in the Department of International Relations of Saint-Petersburg Polytechnic University, by applying the concepts of comparative linguistic culturology in daily foreign language teaching process.

Keywords: comparative linguistic culturology; chinese language as a foreign language; language teachning methodology; pratical skills in language studies; international relations.

The concept of "linguistic culturology" was firstly advanced by Soviet scientists V.G. Kostomarov and E. M. Vereshchagin in early 70s of XX century. As defined by their works "Linguistic problems of the country studies in teaching the Russian language to foreigners" (1971) and "Language and culture" (1973), the new scientific approach to teaching a national language to foreigners, was based on using cultural facts in the process of learning the language and techniques to familiarize students with the new culture.

Chinese scientists imported this theory in late 80s, and are developing it continuously, synchronizing it with the actual and practical educational situation in China. In terms of theoretical development, linguistic culturology has been extended to comparative linguistic culturology, which describes a teaching aspect from the practical foreign language teaching process, using national culture to

transfer another national culture of language and people, which the students are studying (Zhu Bangfang, 1987).

In our opinion, comparative linguistic culturology in serving the process of teaching a foreign language to non-native speakers, whose final goal is to discover and compare the relations between languages and cultures of two nations or countries.

For instance, Chinese language teaching in the Department of International Relations of Saint-Petersburg Polytechnic University started in 2003, it's been conducted as an educational module of the bachelor's degree program "Regional studies: China", which contains comprehensive knowledge about multi-aspects of China, such as politics, economy, history, culture, language and so on. Language studying makes the foundation of this program, since every student is to keep studying it for the whole period of bachelor's degree program.

In terms of applying comparative linguistic culturology ideas in our daily teaching methodology, we have experience from working with first-year Russian students by using the concept in 2017.

Firstly, set up an independent mechanism of material searching for students. As we know, the first-year students usually have little or poor knowledge about the language they are going to learn, as well as the general information about the selected country for research. Therefore, it's recommended to provide the students with individual assignments of searching and familiarizing with materials about China.

The first semester is to build up a phonetic and hieroglyphic foundation for the first-year students, after the elementary training, we started our new methodology since the second semester.

We defined ten weekly topics together with students, which included historical facts, national traditions and myths, multi-nationalities in China, political situation, social mentalities, geography and natural scenes, science and technology, ancient and modern literature, publications and movies, and bilateral relations

between China and other countries. These topics qualify the standards of language teaching of the regional studies, majoring in international relations.

Each student is to collect materials for each topic, the details and length of contents are not limited. All collected information should be presented as a report, a student is to talk about his interested subject in the Russian language to the whole class, meanwhile he/she should tell us key words of the subject in the Chinese language in the beginning.

Then other students ask their questions or share opinions on the reported subject in both the Russian and Chinese languages to each other. And teachers are to correct vocabulary and grammar, as well to inspire students to think over the same subject, but in the context of two different cultural backgrounds. Considering principles of the comparative linguistic culturological methodology, comparing one subject by two thinking modes, analyzing languages, traditions and other country study areas, teachers will encourage the audience to use their own knowledge on something trying to understand it in a foreign way.

After one-semester practice, most first-year students are already able to search for the basic information in the Chinese language and apply it in their works or assignments as extra references. Even when our ten-week training is completed, students continue doing this work on their own every day, they deepen and broaden the interesting information which they have found themselves.

In conclusion, we have some advice of adjustment to teaching methodology:

1. Inspiration and motivation are the beginning of language study. It's important to assist students to find what they are exactly interested in, for instance, in the language and regional studies.

2. Less subjective judgment, but more objective understanding and respect. Comparative linguistic culturological study is not a science to judge others, but to enhance better understanding of culture and people diversity.

3. Integration of language learning with regional studies. As part of international relations studies, different language skills are important for doing global research.

Meanwhile, non-language disciplines of the program, such as history, international relations, political science, conflictology, psychology, economics and many others are also vital for the future research of students.

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Application of Internet resources for Russian language studies of Chinese students in Saint-Petersburg Polytechnic University

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Abstract

Evolving along with fast developing information and telecommunication technologies, the traditional teaching methodologies have been changed. While working with international students during Russian language studies, it's recommended to apply the updated Internet resources. This article discusses the interactive independent learning process of Chinese students in Saint-Petersburg Polytechnic University.

Key words: digital educational resources; internet resources; russian language as a foreign language; methodology of teaching foreign languages; chinese international students in russia

Living in the information era, Internet resources are playing a much more significant role in our daily live, and becoming popular in most countries. In terms of using Internet materials, there are a lot of application fields. who study the Russian language in the Department of International Relations of Saint-Petersburg Polytechnic University (SPbPU), which is the third largest university in Russia, which enrolls a big number of foreign students every year.

In our Department, most Chinese students study by the bachelor's degree program "Reginal studies: Russian Federation". This program was designed to provide a comprehensive image of Russia, its language, culture, history, politics, foreign policy, economy, society and so on. Many alumni work in consulting or trading companies in Russia or China, using their bilingual advantages and international knowledge.

Thus, for these groups of international students from China, our Department is implementing the information study encouraging project as an additional Russian language learning resource. And the core of the project is to sort out available Internet resources for Chinse students:

Firstly, to improve listening skills we recommend these websites in the Chinese and Russian languages: http://ru.hujiang.com/zt/eyutingli/ (Hujiang Russian language – listening portal), http://ru.tingroom.com/ (Russian studies portal), http://www.eyurumen.com/ (Introduction to Russian language portal). All these websites provide a quantity of news, tests, common spoken phrases, fairytales, videos, songs and many other subjects, even information about job vacancies for Russian language learners of different levels.

Secondly, online chatting and practicing technologies. We recommend using the Russian social network: http://vk.com/ (Vkontakte, VK), where Chinese students may easily find their Russian friends from the same department or the university; as well as the Chinese social network mobile program (IOS, Android or PC): http://www.wechat.com (Wechat), which is gaining global popularity, and functions as a voice, text and pictures messenger. Moreover, e-mail and different forums can provide the information exchanging functions.

Thirdly, to intensify daily reading of original texts in the Russian language and in the Chinese language, depending on the language level of a student. For this section, we recommend Russian news websites, such as news.sputnik.ru, which provides news in the Russian and Chinese languages; Chinese biggest news agency – Xinhua in Russian language: http://russian.news.cn/index.htm.

Fourthly, main searching engines of Russia and China, including the academic searching: http://www.baidu.com (Baidu), http://google.ru (Google), http://yandex.ru (Yandex), http://oversea.cnki.net (China National Knowledge Infrastructure), https://elibrary.ru (Scientific electronic library).

Therefore, by using the informational and technological approach to encourage students to work independently with internet resources to learn the Russian language, we found the following changes in our teaching process:

1. Convenient way of study. A student can use any devices, which are connected to the Internet, find everything that he needs for independent learning at his free time after classes.

2. The online resources can offer extra materials for students to keep studying their language; and these resources serve as the invisible interactive platform, where students could leave their inquiries to explain some issues about the teaching process, whereas teachers can answer them or even broaden the subject within their working hours but no at classes.

3. Make independent learning more realistic. It's well known that learning any foreign language requires a lot of patience and hard work, especially, self-organized independent learning. Internet resources may provide students with images, texts, soundtracks, etc., Tso that students could select the information they want. Moreover, it encourages students to keep studying.

In conclusion, modernization of foreign language teaching methodology is an important part of foreign language teaching modernization. The fast development of our lives requires new approaches to teaching the Russian language. As a Russian language teacher of the information era, I would recommend updating methods and concepts of teaching, keeping adopting new information technologies and improving teaching skills by using IT resources.

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University CLIL: Multimodal conceptualization of the academic content in English

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Abstract

Our longitudinal action research shows that content and language integrated learning (CLIL) may become an indispensable educational approach in those higher educational contexts where the number of students with low English language proficiency levels on entering the university is still large. The introductory economics courses which integrate subject-specific content (micro- and macroeconomics) and English for specific purposes (ESP) have been designed for the first-year economics students in Peter the Great Saint-Petersburg Polytechnic University. The courses were aimed not only at the language proficiency of CLIL learners but also at the subject learning provided the students engage in cognitively challenging activities while collaboratively conceptualizing new subject-specific content. The task, however, is extremely challenging as the academic input is dominated by theoretical concepts and the students have no prior experience in using English as the language of instruction. A two-semester experiment on using graphic visualization to scaffold meaning construction and speaking skills has been conducted in a large mixed ability group. The results reveal that graphic visualization support students' acquisition of the new terminology, raise their awareness of the subject-specific discourse, help them internalize abstract concepts and provide them with abundant speaking opportunities.

Keywords: content and language integrated learning (CLIL), higher education, conceptualization and meaning making, graphic visualization

1 The purpose of university CLIL-disciplines and an arising problem

The internationalization of higher education brings about new opportunities for students to participate in international mobility with a number of significant benefits of widening their academic, social, and cultural horizons. A rapid increase in the use of English as a medium of instruction in tertiary education appears a high barrier for Russian non-linguistic students who enter home universities with the general English language proficiency level ranging from A2 to B1 (CEFR), which is considered insufficient for being used as the language of learning. In order to create an effective framework for the development of

academic English for specific purposes, two-semester CLIL courses on the essentials of economics integrated with ESP have been designed. A new topic is introduced every week through short authentic texts and biweekly lectures. The task, however, is extremely challenging as the students have no prior knowledge of economics and no experience in using English (L2) for learning a subject. Moreover, the academic input of the course is dominated by theoretical concepts. Practical observations of how students deal with a new academic input have shown that they tend to apply a linear information processing strategy and rely on the translation of the texts into the Russian language (L1) word by word, which seems to support their comprehension of some points but leaves many 'white spots' especially in cases where linguistic structures in L1 and L2 do not directly coincide. When asked questions about a particular concept, even the linguistically 'stronger' students choose to rely on the memorization of chunks from the texts. As to the 'weaker' students, they are mainly busy with the new vocabulary trying to achieve at least some degree of reading comprehension. These students can progress in language learning through using if proper scaffolding is provided (Ellis 2015). All this became a starting point for us to articulate a question of what scaffolding type and tools to apply in order to facilitate cognition in learning academic content through L2 in our educational context.

1.1 Meaning making in CLIL for active knowledge-construction

Research shows that CLIL provides an appropriate environment for the active learning of both the field-specific content and L2 (Dalton-Puffer 2007). Yet, there is some concern among CLIL-experts that the focus on L2 development may not be accompanied by the focus on subject-specific literacy development, at least not to a degree it deserves. As a result, CLIL does not reach its full potential (Meyer et al. 2015). A genuine integration of content and language invites active input processing techniques and close collaboration between all the participants in the classroom because "CLIL is not about the transfer of knowledge from an expert to a novice. CLIL is about allowing individuals to construct their own understandings and be challenged – whatever their age or ability." (Coyle et al. 2010, p. 54)

Cognitive processes are, by definition, of a creative character and learners are expected to be 'creators' of their new subject-specific knowledge and language literacies. However, on this knowledge pathway towards deeper subject understanding through enriched L2 they need sufficient and effective scaffolding to support and guide them in their attempts to acquire new academic knowledge simultaneously with new academic language (Hammond 2001; Ting 2010).

Cognitive psychologists are unanimous in considering meaning making in cognition as an active knowledge-constructive process, notably Vygotsky (1999) with his idea of the 'zone of proximal development' and Bruner (1977), who considers the learning act as a move 'beyond the information given'. A knowledge constructive approach to cognition suggests prerequisites for the learner to cross the line between the 'unknown' and the 'learned'. According to Vygotsky, one of them is scaffolding initiated by an expert/instructor helping learners overcome the difficulty barriers which, otherwise, may appear too high.

1.2   Graphic visualization as a tool for meaning making

An empowering scaffolding tool for the theoretical knowledge construction has been suggested by the developers of the theory of concept mapping. (Novak & Cañas 2008). They argue that concept maps have properties which help learners organize and represent knowledge by establishing relationships between the concepts making propositions or 'meaningful statements'.

This idea of concept mapping has been used to design a graphic organizer which we called a 'Concept Flow Chart' (CFC) to scaffold economics students' knowledge construction using L2. The working hypothesis was that the engagement in the multimodal graphic reconstruction of the textual input will not only help students better comprehend the text in L2 but also will increase the role of the English language in structuring new conceptual input..

In the CFC, the key words are enclosed in ovals and are laid out in a hierarchical structure, with the fundamental concepts at the top of the CFC and the related detailed concepts at the lower level. The relationships between concepts are shown by arrows forming a tree diagram which unfolds downwards representing the logical development of a theory presented in the text. Unlike in concept maps,

in CFCs the verbs to make propositions are deliberately omitted. This is because, besides being a meaning making tool, the CFC is also designed to visually support students in their articulation of the new knowledge at their level of language proficiency. The students practice speaking in their own words choosing the grammar and vocabulary structures which the instructor suggests for different proficiency levels. For example, to demonstrate the cause and effect relation, the 'weaker' students are provided with a chunk 'leads to', and the 'stronger' students are recommended synonymous structures such as 'causes' or 'results in'.

Unlike in traditional concept maps, the CFCs are supposed to include very short, 2-3 elements containing symbolic representations of definitions of the new concepts using formal abbreviations and images. In addition, CFCs may include extra information in a short bulleted list next to the concept or small graphs to support the theory in question. By moving from the initial text as an input to graphic visualization as a meaning making process, the students have better chances to produce their own text abstaining from the memorization of the input.

2   The framework of the experimental learning

The aim of this experimental learning/teaching was to observe how graphic visualization of the concepts presented in written texts supports students' understanding and conceptualization in L2. The experimental lessons took place in the first semester (basic microeconomics) and in the second semester (basic macroeconomics). 15 micro- and macroeconomic texts had been grouped in 6 modules with one text per a 60-minute lesson. The texts of 600-700 words each had been abridged from a British economics course book for undergraduates. Each text had been supplemented by a bilingual glossary of key words (fundamental and more detailed concepts) and word collocations so that the students acquired both English and Russian terminology as these introductory courses were followed by economics disciplines in the Russian language, the main language of instruction in the university.

2.1 The description of the procedures

A group of 55 Russian undergraduates participated in the experimental learning. The tutorials had the same didactic procedures so that the students could acquire new habits of the integrated learning and, eventually, develop a certain degree of independence though the instructor was around all the time to guide their learning, to monitor, to comment and to provide support to those who needed it most.

The first text of the course was done with the whole class. After the new terminology was read and reflected upon, the students were given 5 minutes to skim the text and then some minutes more to locate the key terms and to identify the structure of the text. Also, the aim and the principles of drawing a CFC were introduced, and the instructor demonstrated how to visualize the main concepts and their relationships going from paragraph to paragraph. At the end of the first lesson the guidelines and the assessment criteria were made clear to the students, and this procedure of transforming the text into a CFC became an integral part of the classroom activities. Students were encouraged to analyze the texts collaborating in pairs/trios and to share ideas of how to visualize the new knowledge in the CFC. The CFC draft made in class in pairs was elaborated by the students as part of their individual home task, and during the first 15 minutes of the following lesson, the students practiced speaking utilizing their own CFC in small groups.

2.2 The CFC evaluation criteria

In order to identify the students' progress in the graphic visualization of the newly learned academic input, five aspects were chosen for the evaluation:

1. The layout of the CFC and 2. Logical links between the related concepts. The layout of the concepts enclosed in ovals/boxes and the logical links between them using arrows form a certain graphical pattern which immediately reveals whether the theory in question is structured appropriately or not, i.e. whether students succeeded or failed to establish all the necessary relationships in an appropriate hierarchical fashion, which, in turn, indicates that the categories and the functions of the concepts in the theoretical explanation are correctly understood.

3. The concept elaboration. The depth of the concept elaboration shows whether students succeeded in the conceptualization of all the ideas in the text or just skimmed some of them. This full coverage of the information is of importance as the texts contain a minimum of basic concepts and supporting ideas to introduce a particular theory at the introductory level.

4. Multimodality of the text transformation. In teaching and learning multimodality is believed to foster the construction of knowledge (Moreno & Mayer 2007). In our case, the students deal with sophisticated academic input written in L2, so their knowledge reconstruction through the CFCs should improve if conceptualization is supported by non-verbal means, images, symbols from various semiotic systems, formal abbreviations used in particular subject-specific discourses or informal abbreviations and icons created by the students themselves.

5. The exemplification. The inclusion of examples from the text, group discussions, or students' personal life not only strengthens the comprehension of the concepts but shows the students' ability to see the links with the real world.

The assessment of each of the five aspects was based on the answer whether a student mastered knowledge-organizing techniques and non-verbal devices to reconstruct the concept/theory in his/her CFC. Three answers were used in the assessment: Yes – 2 points; Partly Mastered (PM) – 1 point; No – 0 point.

2   The discussion of the results

The results of the progress in drawing CFCs are summarized in Table 1. Two CFCs were analyzed: CFC "Demand" (one of the first topics) and CFC "Banking" created five months later. The columns show the numbers of students who got 2 points (Yes), 1 point (PM) or 0 points (No) for each of the five aspects.

Table 1. The results of the assessment of the participants' CFCs over time.

Aspects/ CFC	1. Layout	2. Logical links	3. Concept elaboration	4. Multimodality	5. Exemplification
CFC 'Demand' n=50	Yes: 18 PM: 18 No: 14	Yes: 13 PM: 17 No:20	Yes: 15 PM: 24 No:11	Yes: 13 PM: 26 No:11	Yes: 9 PM: 27 No:14
CFC 'Banking' n=48	Yes: 30 PM: 9 No:9	Yes: 19 PM: 20 No:9	Yes: 15 PM: 25 No:8	Yes: 22 PM: 14 No:12	Yes: 22 PM: 20 No:6

The data in Table 1 show an increase in the number of the students with 1 or 2 points in all aspects excepting Aspect 3 (Concept elaboration). The most significant improvement can be found in Aspect 1 (Layout): almost two thirds of the students got 2 points for CFC "Banking" compared to just a third for CFC "Demand". With Aspect 2 (Logical links), the number of students with 1 or 2 points also increased. This implies that an engagement in the CFCs creation contributed to the development of an ability to differentiate between the key concepts and the supporting details/categories (Aspect 1) and to identify the hierarchical links between them (Aspect 2.).

An improvement in Aspect 5 (Exemplification) is also noticeable: the number of students with 2 points more than doubled. It seems obvious that abstract concepts connected to an event or situations in the real life are better conceived when the examples are used either from the text or as a result of the discussions. This correlates not only with the accumulation of domain-specific knowledge and of academic English, but also with their collaboration with each other and the teacher by sharing their personal experience in their everyday economic decision-making.

In Aspect 4 (Multimodality), the number of students unable to efficiently transform the verbal text into a multimodal schematic form remained high (one in five students) though more students got 2 points (22 vs. 13). Students' continuous questions concerning text transformation suggest it to be one of the most challenging tasks. However, the more experience students gain by sharing with

each other their findings of how to compress the text and use non-verbal symbols and cause-and-effect chains the more they succeed.

Little change in Aspect 3 (Concept elaboration) throughout the course may indicate that not all students are inclined to a detailed interpretation. When they achieve a certain level of understanding, the further elaboration of the concept may not look an attractive or important activity any more. Other students, on the contrary, seem to enjoy a more detailed analysis. This difference does not correlate with the students language proficiency level as in all three groups (Yes, PM, and No) we can find both 'stronger' and 'weaker' students. We suppose that It can be attributed to the differences in attitudes, interests and motives or students' previous learning experience. Anyway, more research is needed to find out how personal attitudes to what and how one learns affect the learning outcomes.

3   Students' reflection concerning the effects of graphic visualization

Throughout the course, the students definitely enjoyed the learning process and expressed their satisfaction with the learning outcomes in their individual reports after the course. To have a formal feedback from the students, a questionnaire was given to the participants two months after the beginning of the course. They were asked to write their answers to two questions: 1. Does drawing CFC help you learn economics? If yes, how? 2. Which do you prefer, to draw your own CFC or to use the teacher's template?

52 out of 55 students answered Q1 in the affirmative. All the students pointed at least to one or two benefits of drawing CFCs. In 39 comments out of 52 the students wrote that the CFCs help (the students' exact words) *better / deeper / faster understand / comprehend / grasp the text / concepts / information / topic.* In 24 comments the students emphasized that the CFCs *help structure / group / analyze / learn / memorize / put in order / systematize knowledge / facts / ideas.* As we can observe, these comments correlate with the improved results in Aspect 1 (Layout) and Aspect 2 (Logical links) and support our hypothesis that the active

engagement in the CFCs production benefits the conceptualization of a new abstract input.

Question 2 was included in the questionnaire because, for some of the texts, the students had been given a template with a ready-made layout of the ovals containing categorical labels like 'types', 'function', 'characteristics', 'tools', etc. The template was primarily aimed at the 'weaker' students. The idea was to give them extra support for structuring the input. Templates seemed to have been accepted with enthusiasm by the students. The task appeared easier, and the time spent on drawing CFCs definitely reduced. But after the analysis of these CFCs, the effects of the templates raised some doubts. Firstly, the learning outcomes did not improve and in some cases even worsened. Also, the answers to Q2 of the questionnaire demonstrated that the majority (32 respondents out of 55) were strongly in favour of drawing CFCs on their own without a template, and among these respondents there were both linguistically 'stronger' and 'weaker' students. According to some comments, CFCs help develop their own understanding and ensure deeper analysis of the texts. For every fifth respondent, the process of creating their own CFC is *more challenging / exciting / interesting* (the students' exact words from the answers to Q2). Seven respondents emphasized the benefit of obtaining *useful study / cognitive / logical thinking skills* by drawing their own CFCs.

4 The concluding remarks and limitations

To sum up, graphic organizers change the way students learn new content through a process of decoding meaning. Indeed, the creation of CFC can be considered complete only after students achieve a certain 'cognitive balance' by moving between the text and the CFC in a recurring deductive-inductive process. Some comments emphasize the benefit of having to return to the text multiple times when looking for an appropriate location for each concept in their CFC.

The experimental learning took place in a large group of mixed-ability students who worked in pairs/trios to process the input and to draw drafts of CFCs. Obviously, students contributed to the outcome differently, some more, some less. So we have to use the data with caution and, probably, to use the

information as a reference showing general trend. Furthermore, informal talks with the students make us think that, in some cases, the quality of the CFCs reflected the time and effort students invested in the task rather than their actual skills. This also implies some reservations when interpreting the learning outcomes.

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Assessing Writing:
A comparison of students taught in a face-to-face and a blended learning environment

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Abstract

Studies investigating the written performance of students taught in face-to-face compared to blended learning environments have shown that the hybrid group´s performance is either equal to that of the control group taught face-to-face (Chenoweth et al. 2006), or that the treatment groups (where blended learning is applied) even outperform the control groups (cf. Adair-Hauck et al. 1999, Chenoweth and Murday 2003). This paper aims to discuss the abovementioned findings by comparing them to the results of a research project performed at a university of applied sciences in Graz, Austria. Based on the respective theoretical background with regard to assessing writing, the written performance of students taught face-to-face (control group) and that of students taught in a blended learning environment (treatment group) are discussed. Therefore, the students´ results in a pre-test at the beginning of the semester and a post-test at the end of the same semester are evaluated and compared. Finally, conclusions pertaining to the students´ performance are drawn and possible links to the method of teaching are established.

Keywords: assessing writing, blended learning, performance measurement

1 Assessing writing – some general aspects

Speaking a foreign language fluently is something most learners strive towards. Good writing skills are more difficult to learn, even for native speakers (Tribble 1996, p.3). Byrne (1988) refers to psychological, linguistic and cognitive aspects that render writing in a foreign language a challenging task. When speaking, other people are physically present and give us feedback; completing written tasks is psychologically demanding as they (at least when tests are taken) have to be completed by the writer without any interaction and thus constitute a solitary activity. This also leads to the second aspect, the linguistic problems of writing in a foreign language. While speaking consists of interaction, incomplete sentences,

repetition, backtracking, etc., such features are not available for students preparing written discourse. They instead have to use their own linguistic abilities to create logical communication, and link and sequence their ideas on their own. The final aspect Byrne refers to is that of cognitive problems. He points out that speaking comes more naturally for most people and can be done without making too much of a conscious effort. Writing, on the other hand, has to be learned via a certain process of instruction. Students need to learn to organise their ideas and thoughts (especially in a foreign language) so that their readers are able to understand their written discourse (Byrne 1988, p. 4). In addition, it has been found that writing texts in a second language is a difficult task for language learners, as limited language proficiency may lead to an incorrect understanding of the instructions or the source text. On the other hand, second-language writers seem to do less planning before writing a text; they devote less time to revising content and their writing may be less fluent and accurate than that of mother-tongue writers. Moreover, second-language writers may not be au fait with social and cultural factors – they may not be aware of certain textual standards in the target culture or expectations of readers from different cultures (Weigle 2002, p.36). These aspects need to be taken into account both when teaching students and assessing students. The assessment of the written discourse of students taught in a face-to-face and a blended learning environment will be discussed in chapter 2.

2 Assessing writing in the framework of a research project

In the following subchapters, the stages, respectively products, of assessing students´ written discourse will be discussed in more detail with regard to the author´s research project and related to the characteristics of written language outlined in the first chapter. First, the research project will be explained briefly.

2.1 The research project

From 2014-2016, the course Technical English (comprising 2 semesters) was taught at CAMPUS 02, UAS, as a face-to-face course (32 face-to-face contact lessons) and a blended learning course. The content and learning aims were the same for both course units. In the blended learning course, however, face-to-face tuition was more than halved. The design of this treatment course was mainly

based on an inverted classroom model. In four e-learning sessions, students had to complete small e-learning tasks via social media, watch learning videos and use other online tools to acquire and use vocabulary and improve their reading, writing and speaking skills. To assess and monitor their writing, the students of the control and the treatment group took a pre-test at the beginning of the first semester of teaching and a post-test after one semester of teaching. Following an explanation of the assessment, the results of the students´ written performance will be analysed in chapter 4.

2.2 Purpose of assessment

Based on Bachman´s model of communicative language competence (Bachman 1990, p. 87), the students´ organisational and pragmatic competence was tested. Organisational competence comprises grammatical competence and textual competence. Pragmatic competence is divided into two categories: illocutionary competence and sociolinguistic competence.

2.3 Tasks and criteria

The task of the pre-test and the post-test consisted of summarising an article taken from a scientific journal. Asking the students to summarise a text is a so-called "controlled writing task" (Weir 1990, p. 61). According to Weir, it is important to avoid free, uncontrolled writing as the task needs to be rather specific in order to compare students´ performance and obtain high scoring reliability. Weir states that summary writing is a suitable task to test students´ writing ability as it depicts the students´ capacity to choose relevant information from a wide range of data and to re-combine this information (Weir 1990, p. 62). It shows the students´ "ability to write a controlled composition containing the essential ideas of a piece of writing and omitting non-essentials" (Weir 1990, p. 62). In addition to finding a good task, finding suitable scoring criteria is essential since the score defines what inferences are made about the writer´s language competence. Therefore, two aspects are critical: preparing suitable and valid grading scales and ensuring that the scales are used appropriately and consistently by the assessors (Weigle 2002, p.108). Two main types of scoring will be discussed in this paper: holistic scoring and analytic scoring.

Holistic scoring describes the assignment of one single score to a piece of writing submitted by a student (Weigle 2002, p. 112). To assess a student´s writing holistically basically means to see things as something complete, as a whole, and without using subscores (White 1984, p. 400). Holistic scoring therefore presents the overall impression the student´s written discourse makes on the reader. When holistic scoring is used, the rater quickly (typically one minute or less is spent on reading one handwritten page) (Hamp-Lyons 1991, p. 243) reads the student´s piece of writing and then usually evaluates it using a rating scale outlining the scoring criteria (Weigle 2002, p.112). The advantages of holistic scoring are that it is not very time-consuming and thus proves less expensive than other types of scoring when the student´s writing is read more than once, each time with the focus on a different aspect of writing (Weigle 2002, p. 112; White 1984, p.402). Other advantages of holistic scoring are that the raters concentrate on the students´ strengths, i.e. on what they can do, rather than focusing on their weaknesses. When scoring rubrics are designed well, they can offer information about a certain aspect of writing (Weigle 2002, p. 114). Edward White, one of the most well-known advocates of holistic scoring, also points out that holistic scoring is authentic as it reflects the reader´s (first) reaction to a text. He claims that "too much attention to the parts is likely to obscure the meaning of the whole" (White 1984, p.409). However, it should also be mentioned that holistic scoring has a number of disadvantages. One scoring for a text may mean that no valid diagnostic information about the student´s general writing ability can be made, as there is no distinction between different aspects of writing (Weigle 2002, p. 114). For example, when a student has a wide range of vocabulary and good general language control but is not able to organise his/her writing successfully, this cannot be reflected by giving him/her one holistic grade. Weigle mentions that this plays a vital role when grading second language learners, as their writing abilities (for example grammar and vocabulary) may have reached different levels (Weigle 2002, p.114; Hamp-Lyons 1991, p. 241). This fact leads to the next problematic aspect: It might be very difficult to interpret holistic results, since when giving a certain grade, raters may refer to different criteria (Weigle 2002, p. 114). An assessor may rate a student´s summary as a 4 because of its organisation, while a different assessor may give the writing a 3 because of its linguistic features. As a consequence, holistic scoring is also not meant to offer

correction or editing (Charney 1984, p. 67) and therefore contributes nothing to increasing a student´s proficiency.

Analytic scoring on the other hand is a rating method that is based on several aspects of writing instead of using one single score (Weigle 2002, p.114). Criteria may include content, organisation, cohesion, register, vocabulary and/or grammar. The criteria and their descriptors form a grid, and raters choose one score for every criterion. Therefore, analytic grading scales are able to give more detailed information about a student´s performance with regard to a number of different aspects. These aspects usually contain descriptors and may be rated equally or differentially (Weigle 2002, p. 114ff.). One of the main disadvantages of analytic scoring is the fact that it is rather time-consuming, as examiners need to rate more than one aspect for every piece of writing. In addition, when individual scores are combined to generate one final score, experienced raters seem to tend to match their rating with their expectations about what the total score should be (Weigle 2002, p. 120). Another criticism that has been voiced is that scoring students´ written work based on rather vaguely defined criteria is a highly subjective process (Weigle 2002, p.119). Therefore, experts suggest that the criteria should be defined as clearly as possible (Weir 1993, p. 156).

For the present research project it was important to obtain an in-depth diagnosis of the students´ writing abilities, as well as the development of their writing skills over a semester of teaching. Therefore, an analytic rating scale with eight criteria (scoring rubrics) was used. All the rubrics were rated equally. Scores ranged from 0 (worst performance) to 4 (best performance). The rubrics will be discussed in chapter 4.

3   Performance

The social and situational context may influence the production of written discourse. Dell Hymes´ SPEAKING Grid (Luoma 2004, p. 24f.) gives a good overview of such influences and is therefore used to describe how the two writing tasks (pre-test and post-test) are performed by the students:

Situation: The pre-test was done in the first course session of the course unit Technical English I (5th semester) in one of the classrooms of CAMPUS 02, UAS. It was administered by the lecturer and formed part of a battery of tests. The post-

test was carried out as an element of the written exam at the end of the 5th semester in one of the classrooms of CAMPUS 02, UAS and was also teacher-administered.

Participants: The students completed the pre-test as well as the post-test on their own and were not allowed to use any aids.

Ends: The aim of participating in the pre-test was the participation in the research project. The pre-test was not graded but students may have considered it as practice (they received feedback if they wanted) and it can be presumed that they wanted to show their strengths. Therefore, it is assumed that they took the pre-test seriously. The aim of completing the post-test was the successful completion of the course unit.

Act Sequence: The students were asked to read and summarise a two-page article of a scientific journal (the same articles were used in both groups). The task aimed at testing the student´s ability to summarise a scientific text. The task was to be completed in isolation and in approximately 45 minutes.

Key: The students were informed that the tone of the summary should be rather formal.

Instrumentalities: The task was to be completed in writing; the students handed in their handwritten summaries.

Norms: All students had to complete the task on their own, there was no teacher intervention.

Genre: Both tasks were written tasks.

As has been described above, there are indeed minor differences between the pre-tests and the post-tests, for example with regard to situation and ends. For the present research project, this could not be avoided. However, differences between the two tests were kept to a minimum, so that it can be assumed that a comparison of the results provides valid information. A further discussion of test validity, the assessment process and the results will be provided in the following chapter.

4 Assessment and results

According to Weir, tests have to be valid, reliable and practical. A task is valid when it actually tests the features the test designer wants it to test. Weir claims that tasks should reflect the realistic use of the ability that is evaluated in the test. A task is reliable if it produces the same results when retaken (Weir 1993, p. 19ff.). Therefore, factors that are not related to the test but could lead to variations should be minimised (Hyland 2003, p. 215). Another aspect is examiner (rater) reliability which refers to the fact that different raters will arrive at the same result. Good test administration also influences reliability. Finally, tests need to be practical, because personnel as well as financial resources are often limited (Weir 1993, p. 19ff). These factors will be analysed with regard to the assessment of the students´ written discourse.

4.1 Assessment

This subchapter deals with the assessment process. The final rating was done by two raters. In addition to the author of this article, who also taught the students, a second rater assessed the summaries. The two-rater system was used to ensure reliability, defined by White as a technical term describing consistency in grading (White 1984, p.403). The second assessor is a former lecturer at CAMPUS 02, UAS. She was chosen for her qualifications and experience, but also because it is important that scale developers as well as raters have a comprehensive understanding of the target students´ general proficiency and ability levels and, as such, their strengths and weaknesses (Nimehchisalem 2010, p. 246f.). Being a lecturer at CAMPUS 02, the second rater knew about the students´ general level of English.

To ensure an objective grading process, both raters must agree on the correct answer (Hamp-Lyons 1990, p. 78). In the course of the research project, both examiners agreed beforehand on the structure of a summary and on the most important facts to be included. During the rating process, the raters marked the texts independently. After the scoring process the two scores were compared and averaged. Had there been a significant difference in the mark attributed, (a difference of more than one point for one criterion), a third rater would have be used and all three scores would have been averaged (Hamp-Lyons 1990, p. 80)

– however, this was not the case. The assessment process described above is considered to be valid, reliable and practical in accordance with Weir´s definition. After the discussion of the assessment process, the results of this process will be analysed in the following chapter.

4.2 Results

First of all it should be pointed out that the control group as well as the treatment group took the online Cambridge Placement Test at the beginning of the first semester to obtain an overview of their level of Englisch. The control group (22 students) had an average result of 61.4%. The treatment group consisted of 32 students and their average score was 67.5%, i.e. slightly higher than that of the control group. Both results correspond to level B according to the *CEFR*[1].

In the first writing test (pre-test) administered at CAMPUS 02, the control group had an overall average score of 1.88 (with 0 being the worst and 4 being the best mark) in the eight rubrics, while the treatment group had an overall average score of 1.64 which is somewhat remarkable, as their performance in the Cambridge test was better than the control group´s. However this can be explained by the fact that this adaptive placement test does not test writing skills but mainly assesses reading and listening skills. At the end of one semester of teaching, the results of the control group deteriorated in all but one category (D: *Scope of vocabulary*) with the group´s overall average score in the post-test being 1.72, while the treatment group students achieved better results in their post-tests (overall score 1.84) with improvements in every category except for category H (*Mechanical accuracy*). Figures 1 and 2 below show the average scores (0 to 4) in the eight rubrics A-H (A: *Relevance and appropriacy of content*, B: *Composition and arrangement*, C: *Cohesion*, D: *Scope of vocabulary*, E: *Accuracy of vocabulary*, F: *Scope of grammar and structures*, G: *Accuracy of grammar and structures*, H: *Mechanical accuracy* (spelling, capitalisation)) for both groups in the pre- and post-tests.

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[1] Common European Framework of Reference for Languages
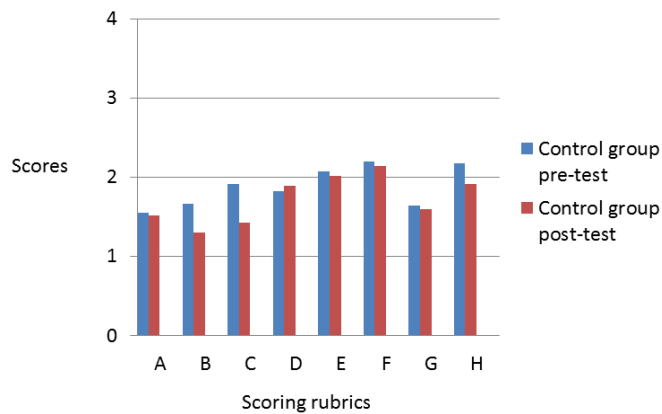
Figure 1. Performance of control group
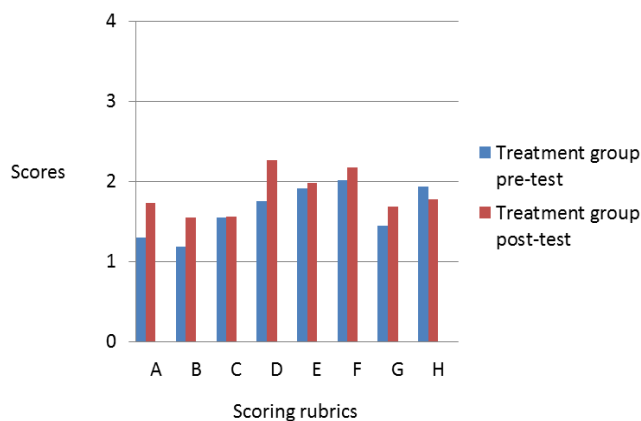
Figure 2. Performance of treatment group

Concluding it can be said that the treatment group students seem to have improved their writing skills compared to the control group students. This might be due to the fact that most of the students communicated in writing with the lecturer on a regular basis via small tasks using social media. This informal context in which spelling is often neglected may also account for the fact that the category *Mechanical accuracy* was the only rubric where no improvement was made. The biggest improvement of the treatment group was made in *Scope of vocabulary* which might again result from frequent, tiny vocabulary-based tasks and the use of videos and authentic online sources during the e-learning sessions.

Summing up it can be stated that research comparing face-to-face and blended learning environments could be verified and interesting conclusions could be drawn with regard to assessment and new teaching methods in the digital era.

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Merging Translanguaging Strategies and Digital Technologies to Help Students Learn Unknown Content through a Foreign Language

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Abstract

The purpose of the article is to discuss the quality of educational process in foreign languages. Special attention is given to the description of interdisciplinary approach, interactivity, consciousness and creativity. To prepare students for increasingly more international professional realities, universities in non-Anglophone contexts are offering coursework in English. For such initiatives to succeed, instruction should guarantee that the quality of Content knowledge acquired through English is comparable to that acquired through L.1 and that the quality of English learnt will enable learners to use English in academic and professional ways so as to provide discipline – appropriate discourse. Blended learning models differ by the amount of face-face teaching and e-learning. Universities are offering programs of instruction through the English language, which are labeled as English medium instruction (EMI). The purpose of EMI is to provide the students with necessary linguistic tools to get adapted to the global demands

Key words: translanguaging strategies, discourse awareness, free digital platforms, complex content, teacher's competences

Whether we call it CLIL (Content and Language Integrated Learning) or ICLHE (Integrated Content and Language in Higher Education), or EMI (English Medium Instructions)etc., we cannot ignore the fact that content in the context of tertiary education is already difficult to understand in the mother tongue. So, if we are proposing content instructions through a foreign language, what is the process? Is it sufficient that the teacher speaks English well so s/he "can explain in English instead of the L1"? For one who is currently teaching English for the students in Polytechnic University, I would say "no". While university students have chosen to study the complex topics that we are experts of, in both tertiary and upper secondary contexts, we are offering students "the joy of learning unknown content through a foreign language», not something most of us would choose to do to

ourselves. So what is the purpose? What is the promise? And what principles and practices can guide what seems to be a rather ungainly process?

Our university graduates should indeed learn foreign languages so as to move seamlessly into and through their chosen globalized disciplinary communities. However, if they are to join any migratory flock of international professionals, students must first and foremost demonstrate mastery of disciplinary knowledge and competences: while awaiting surgery, most of us do not wonder how well our surgeons speaks foreign languages and it is irrelevant if the engineer who is building the new kindergarten speaks only the mother tongue. In tertiary education content cannot be sacrificed for the sake of learning a foreign language.

So, why are more and more universities in non–Anglophone countries offering disciplinary coursework in English? In some instances, the motivation may simply be to attract more foreign students who pay higher tuition. However, in many instances, responsible universities are recognizing that, since English is the lingua franca of most international professional contexts, they have the moral obligation to prepare their graduates for a professional future in which English will be needed. One form of English is that "for socializing with future colleagues". This is a well-established aspect of "Business English" and provides invaluable guidelines for learners of all disciplines who will also need to use English for "pleasantries of the airport" or socializing over business-lunches. In fact, there is a wide range of resources which instruct EFL learners on how to communicate in respectful and culture-sensitive ways. This type of "professional social English" sits within the comfort zones of most EFL teachers and is even interesting for Content colleagues for whom English is a foreign language.

By contrast, "academic disciplinary English" used in official professional communications such as research articles or technical reports may not only hover beyond the comfort zone of most EFL teachers, it often poses a hurdle even for content experts whose professional lives and livelihoods actually evolve around this type of English. If this type of academic discipline-specific English already challenges EFL teachers and university Content experts, then interpreting

English–medium – instruction as simply "use English instead of L1 to teach your content lessons" would be "ignoring the pink elephant in the EMI classroom".

To help responsible universities succeed in efforts to "internationalize" their graduates, those of us involved in EMI have the moral obligation to do more than offer "English for Everyone"; we must move beyond the notion that once teachers and students all "speak English well", EMI will work. In fact, the 2013 OECD PIAAC survey of 150000 adults from 24 countries found that most adults between 24 and 65 years of age have poor literacy and numeracy skills. Since such data reflects education through the mother tongue, it clearly indicates that what matters is probably not how well teachers and students know and speak the language of instruction but how well that language is used to support learning. For EMI to succeed we must delineate and implement strategies for the successful learning of both Content and English; the quality of Content knowledge acquired through English should be comparable to that acquired through L1.Moreover, the quality English learnt through such EMI initiatives should be that needed for generating effective written and oral communications which meet professional discipline-specific standards. And all this should happen within the comfort zones of both the EFL and Content expert.

It is important to know how and why the use of a foreign language for teaching complex content very naturally leads us towards more "brain-compatible" ways of organizing instructions, thus facilitating the learning of otherwise complex concepts. Another question is how EMI makes available four linguistic codes-social mother tongue; academic mother tongue; social English; academic English –providing us with an array of translanguaging strategies we can use to help students access and master not only complex content concepts but also academic language in both English and the mother tongue. The task that we would like to follow is to optimize these linguistic codes through free digital learning platforms so that both English and Content experts can work within their comfort zones. Although the use of a foreign language for instruction of complex content may seem counter-intuitive, done well, it actually provides us with distinct strategies for renovating both content instruction and English language learning. Implementation of distance learning technologies helps us to optimize teaching

process in Polytechnic University. Blended learning models differ by the amount of face-to –face teaching and e-learning. The courses are both universal and adaptable, and facilitate creation of individual learning trajectory. The course materials are mainly authentic with a great deal of audio and video files. The structure and content keep students involved with the course and help to integrate foreign language with professional subjects.

I would like to describe one of my writing classes. Based on the topic/theme that I have set for each lesson, I encourage students to post whatever they can think of, but they have to keep the content simple and to the point. Usually, I see several keywords or phrases that have been typed out by the students, and I refresh to see whether other students have made a new post on the wall; the update is just like the newsfeed of Facebook, so the more recent ones are arranged on the top while the previous ones are at the bottom. Normally, I don't just stop there and let the students take a look at all the posts, but I screen and pick out some very special or creative ones, and I then invite students to tell the whole class how they came up with that. For instance, I still remember one lesson about technology, during which I asked the students to think about what they would like to invent. One student came up with an idea of having an air pollutants collector, with a primary function of reducing the level of air pollutants, especially the greenhouse gases/particles, so that ultimately, it could help solve the problem of global warming. Of course, grammar and language items are also important when it comes to writing, but they are just the 'side dishes'; the key to the success of writing is to have a good idea, which helps form the backbone of the whole essay.

The teacher needs to define very carefully the objectives and range of the bilingual program, the existence of a clear linguistic policy in the university, which identifies the reason for embarking the institution and some of the teachers in the complex enterprise. Training teachers in becoming bilingual instructors is nowadays a demand of society in many countries. The question is, what is the selection process like? Today the mainstream of experts agree that the linguistic proficiency for teaching in a bilingual program should be C1.The selection procedure requests teachers to display linguistic accreditation, depending on the area, and later they are trained in specific strategies for bilingual education. All in

all, the key issue is to equip these teachers with the right competences. These competencies should be furnished with a balanced combination of linguistic proficiency, methodological skills for bilingual education and sound knowledge of the subject content. The key skills for the professional in bilingual education are the ability to coordinate and collaborate with other colleagues, a commitment to constant learning, a capacity to use modern technology, ability to carry out action research. It seems obvious that this training should be the responsibility of the University. Unfortunately, there is still a long way to overcome a false myth in bilingual education, for example that the possession of minimum linguistic competence similar to C1 will automatically enables teachers to teach any content in bilingual class.

More specifically training programs should be designed to equip the university teacher with the necessary skills and knowledge in order to:

–trace down the use of academic language according to objectives, contents and activities established,

–handle the correct vocabulary and academic discourse linked to the contents of the subjects,

–manage different group work to foment collaborative tasks,

–use appropriate scaffolding techniques to facilitate the acquisition of content and to promote the correct verbalization.

Any training program seeking to achieve a good standard of quality should also be complimented with initiatives aiming at increasing the international mobility of the teachers, whether for research or linguistic purposes, or both, and at the same time include linguistic support and specific guidance provided by experts. Finally, universities should take the decision of considering this kind of training as an optional or an obligatory accessory for the teachers who are involved in helping students learn unknown content in foreign language.

Problems of Introduction of Digital Educational Technologies in Russia

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The article covers the aspects of significance of e-learning in the modern world and the specific features of mentality of modern generation of students. The article describes contradictions of transforming of classical methods of education in e-learning in Russia. The existing problems of introduction of digital educational technologies in Russian educational institutions of higher education are also mentioned. The results of the monitoring of students of Saint-Petersburg State University of Economics studying with the use of e-learning are named as well.

Keywords: e-learning, digital educational technologies, educational institutions in Russia, Saint-Petersburg State University of Economics

According to E.Tikhomirova (Tikhomirova, E. 2011), at the moment there are only four technologies in the world that have changed not only human life, but also the way people think, the way they perceive the surrounding reality.

The first such technology was geographic maps that showed a person that the world around him can not only be represented on a certain medium, but he also has borders, lands, mountains, rivers and much more. The next revolution in consciousness was made by the clock. Prior to them, people ate, slept and worked on a natural rhythm, light day and inner needs. The appearance of this tool with arrows taught us to live in fixed time intervals (hours, minutes, seconds). Then there were books. They taught us to perceive information, fix their thoughts on paper.

The fourth phenomenon, which changes not only the way of life, but also the human thinking processes, has become information technology. All these digital devices, the Internet and information networks, as well as mobile phones and communicators have made our life somewhere easier, and somewhere fussier. Step by step they began to change our thoughts. And this leads to changes in education. It is obvious that the changing conditions of life require changes in both principles and methods of instruction.

The development of information technologies and the expansion of technical capabilities, the emergence of new developments and their close integration into our daily lives obliges teachers and creators of educational programs to take all this into account in their work, including to increase the interest of students in the learning process.

Today, in terms of the number of universities, Russia ranks first in the world. However, at the same time, there is a shortage of qualified personnel in the country, companies spend a lot of money on training their own employees, who are able to make decisions and think not only according to instructions. The new digital era dictates its terms - it's good or bad, but new professions arise, new generations grow up with their own way of thinking. They need to be taught, and this is possible for those teachers who not only mastered the visualization language and are not afraid of the computer, but are also able to build a qualitatively new system of relations with students: from the traditional "do it right" scheme - to the new "think for yourself and get skills".

The technical revolution in the sphere of education has already occurred, but the teacher of the university or school still faces the students at the blackboard and gives a lecture. This explains the increasingly often sounded question - what has changed in the learning process, or rather, in the work of the teacher over the past decade? Video chats with experts from around the world, billions of any electronic resources at any time are available to students at home.

Why are we, modern teachers, sometimes far from the world to which we prepare students? Whether we like it or not, the teacher often feels less confident than his student when using IT, which in part diminishes his perception as a professional. On the contrary, to be on top - means to understand modern technologies perfectly, after all the student always is a little ahead of the teacher in this sphere.

What is competence and self-confidence in the digital age? To answer this question means moving forward. Modern pedagogy recognizes that "Web-first" is a simple and accessible method of obtaining knowledge, both for the teacher and for the student. With the advent of the Internet and social networks, the teacher has dramatically increased the opportunity to exchange experience with

her colleagues not only in her university, city, or country, but all over the world. Among teachers there are always those who are ready to jointly create and use resources, ideas and their results. In our time, practically on any subject for professional development there are webinars on the use of software and technology in schools and universities.

In addition, there is a wide choice of courses, from the beginner to the advanced level, where certified professionals work, capable of teaching how to work with so-called "cloud technologies".

Modern devices for cloud technologies are becoming more popular. This is due to their fast start-up time, battery life, the effective price and ease with which information can be shared among other electronic devices. For example, according to the educational association, in the UK in 2016, schools will use almost one million tablets (Savitskaya T. 2016).

The growing use of smartphones in the classroom is another trend that should be taken into account when considering the benefits of using cloud devices. They are used so that students can take photos of their own achievements or scientific experiments and share their results through cloud services such as "Google Drive for Education", launched on September 30, 2014. According to the latest data, 88% of 16 to 24-year-old students have smartphones (Savitskaya T. 2016), which means that the teacher will have to refuse to completely prohibit them, and instead use this technology in lessons to their advantage.

It's no secret that most of the higher and secondary educational institutions in Russia - even if they have a lot of multimedia equipment - today continue to work on the good old class-based system, founded more than 300 years ago. In the 17th century and for almost another four centuries, it effectively followed its destiny: in a short time and "for inexpensive" to give a large number of people basic knowledge and teach them to do quite specific things. In modern conditions, not only social and professional needs have changed seriously, but the very environment of existence.

And we really need to say "thank you" to this system, for the tasks of its time it was beautiful. But now we have moved to the era of informatization, and if before

the specialist had to be able to follow the instructions accurately, today, in the turbulent flow of information, he must quickly isolate the necessary, analyze, prioritize for himself and for others. You can talk about a kind of revolution of consciousness, with which the old system of education cannot cope.

In the conditions of the emergence of new methods, the role of the teacher undergoes (at least, it should) the metamorphosis: instead of presenting certain information that the pupil or student is to learn, the instructor sets directions in which the student moves independently, searches and analyzes information. Before moving on to a new topic, the teacher raises questions on which the student must find answers from sources or video lessons available to him. In fact, this technique involves combining various forms of interaction between the teacher and students, students among themselves - whether individual, group or teamwork.

It is obvious that the new generation, who grew up in the digital environment, must learn in it. And this is not an easy task, to say the least: a challenge for teachers.

High school now needs a synthesis of new techniques with new technologies. They need to work and educate young people, while the institution is "afraid" of the new entrant, since often an applicant or a student has a higher qualification in the use of new technologies and visualization tools than a teacher.

To date, the new role of the teacher is to be not a translator of knowledge, but a navigator in the process of cognition. We are moving away from the traditional concepts of seminars, lectures and workshops. Our task is to create, with the help of an interdisciplinary approach, this "digital generation" competencies that are adequate to the existing level of technology development. Today's unconditional market demand is the availability of management, technical and IT competencies for young professionals.

Also the question arises about the value and availability of information. If earlier to attend a lecture meant to record something in writing, it would take more than one day to search for something yourself, now it means going to write down what you can find on the Internet in 5-10 minutes.

Previously, the information within the walls of the educational institution was difficult to access, and therefore highly appreciated. It was important to attend a lecture, write down, remember. Over time, simply dictated text of lectures has lost its former value. Therefore, today one of the tasks of the teacher of the university is to adapt the training activities to modern conditions, that is, to make them valuable and important. What happens in the university must attract practical value, something that is not so easy to find on the Internet. And these will be dialogues, the joint creation of something new, which will provide a unique, practical knowledge that tomorrow can be applied in the workplace or in your project.

The task of the teacher is to win the competition for the attention of the listener and make the education so that it is not a mere formality, and the knowledge gained over 4 to 6 years in the school should not have been updated immediately after graduation. For this it is important to see not just the direction of development of education, but the vectors of development of society, man and the way of thinking.

At the present stage of the development of higher education, high-quality education appears as an optimal combination of so-called traditional methods of teaching (lecturing, conducting practical and seminar classes, course design, consultations, etc.) and e-learning tools (using electronic textbooks, computer simulators, tests and etc.). Extremes in this matter - when the possibilities of electronic means of teaching are ignored or computer means are excessively involved in the process, and the teacher is excluded from the educational process, leads to an ineffective learning. In this case, the ratio of the proportion of traditional teaching aids and e-learning tools in the educational process being implemented cannot be unambiguously determined in advance. This ratio depends on the nature of the discipline studied, the form of education (full-time, correspondence), the personal characteristics of teachers and students and other circumstances.

Today, many countries, including Russia, are concerned about building an information society. Developed or already implemented programs of transformation to the conditions that it dictates. At the same time, in large states,

mainly within the framework of education: what it is today, such a country will be in five years. In this vein, the educational systems in the world are being reformed. Classical methods of education are transformed in e-learning, universities and schools - in e-university, in e-school. The countries that have passed this stage take the next step: educational institutions become structures creating new knowledge, not only for the purposes of training, but also for practical use in the business environment. The effectiveness of universities in such conditions is assessed not just by the number and quality of trained specialists, but by the amount of knowledge generated by the university transferred to use in the economy.

Obviously, technology is developing much faster than the ability of people to use them. New professions emerge, business requires new specialists, which together form a general trend in the education systems of different countries: the need to develop in the students so-called general skills (soft skills), regardless of their chosen profession. These universal skills imply the ability - be it of a future engineer or doctor - to carry out communications of different levels of complexity, to conduct research, to seek and find the necessary information, its sources, organize work, analyze, and so on.

Very soon the traditional question "what profession do you want to choose?" will become irrelevant. We do not even know what new professions will appear in a few years and, being doomed to such unpredictability, should teach students to adapt in any profession or new environment. Of course, this does not imply a rejection of basic knowledge and a sharp transition from the old methodological system of education. But today it is obvious that the emphasis shifts from knowledge - to skills, because knowledge (information) can be quickly found.

Nevertheless, in the Russian Federation, e-learning is beginning to develop, but the educational community is aware of its prospects and is taking steps to reduce the backlog in this area. The introduction of e-learning into the Russian education system is fully relevant. A significant territory, a large number of people living in small towns and rural settlements, with insufficiently developed communications complicate the possibility of implementing the citizens' constitutional right to education. E-learning is designed to solve this problem. Since September 1, 2013

e-learning has legislative support in Russia. And this can be considered as an urgent recommendation of the state to use this type of education in the educational activities of universities.

In many educational institutions of Russia e-learning already occupies its own niche in the educational sphere. Specialists in the field of e-learning distinguish three main reasons for the active use of this type of education in universities: 1) the need to fight for students (economic reason); 2) the desire to improve the quality of training (quality reason); 3) the desire to improve the efficiency of the university (the cause of effectiveness).

It is necessary to take into account these actual factors for each university, and also that a number of features of e-learning a priori improves its quality, contributing to the individualization of training, the possibility of online updating of content, the release of training time by reducing lecture hours. At the same time, it should be noted that its introduction into the educational process is topical and strategically significant. Another important argument in favor of the active use of e-learning at the university is the work of modern teachers in the context of the introduction of federal state educational standards of a new generation and the related reduction in the amount of classroom work, the expansion and expansion of the forms of independent work of students, for which e-learning opens fundamentally new opportunities.

When solving the problems of introducing e-learning into the educational activity of a university, one should keep in mind and take into account the problems encountered by other educational institutions in Russia. Among them are:
- the lack of electronic content and, as a consequence, the lack of an electronic information and educational environment;
- unavailability of the vast majority of teachers to work with e-learning;
- the existence of a contradiction between the students' psychological readiness and the inability of teachers to work in the field of e-learning;
- a small number of e-learning specialists capable of providing qualified support to teachers and students;
- insufficient development of the regulatory framework in the field of e-learning;
- the copyright of teachers on the developed electronic educational resources

and, as a consequence, the reluctance to expose their resources to open access;

- weak technical security of the university for solving such a large-scale and complex technical task;

- the lack of the possibility for higher educational institutions to make large initial financial investments for launching e-learning.

The monitoring of students of Saint-Petersburg State University of Economics studying with the use of e-learning showed that for them it is valuable as a modern innovative tool for teaching, enhancing their personal and professional effectiveness. It is focused on self-development and self-improvement of students.

To the merits of this type of training, they primarily relate the fact that the central figure in it is a student and active work with the teacher. In addition, students note that e-learning provides them with the opportunity:

- promptly receive the necessary and systematized additional material (and at the same time choose the form of presentation convenient for the student) for effective study of the discipline;

- personally take part in the creation of open educational content;

- promptly evaluate the received knowledge, both independently and under the supervision of the teacher;

- to see the analytic work of the teacher with the electronic journal of assessments;

- to organize communities of interested persons on the issues of discipline and interdisciplinary issues relevant to them;

- create a personal electronic cabinet for posting reports on the results of their studies in accordance with their professional interests;

- democratically and operatively communicate with the faculty, realizing the educational process on the basis of modern communications.

The systematization and analysis of the above mentioned problems make it possible to clearly set a goal related to the actualization of the work of Russian universities on integration of e-learning into the educational activity. Given the relevance, modernity of e-learning and the dynamics of the processes associated with it, the goal should be formulated as follows: "To implement a rapid start of e-

learning in the educational process of universities". This goal is concrete, time-specific, measurable, achievable and realistic, which can be justified by the already existing concrete results and experience in implementing e-learning in some Russian universities.

There is both the experience of using elements of e-learning in working with students, and the experience of organizing and implementing a holistic educational process based on e-learning. Teachers at various faculties conduct webinars, videoconferences; use in their work various social services, electronic educational resources, audio and video materials; work with the Moodle system. In this case, we are talking about the use of specific individual learning technologies. But e-learning is a holistic process. And this should be a holistic system of training. This is also guided by the fact that modern e-learning systems are often called learning management systems. It is this topical and specific managerial activity that modern Russian universities should be able to implement.

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Digital Accounting 2025 project creates new learning opportunities

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Abstract

The Digital Accounting 2025 project aims to increase the level of skills of accounting professionals in order to ensure their successful careers in the fast-changing work environment. Accounting professionals must have the ability to convert increasing volumes of data into business-relevant knowledge, and because of digitalisation, they must also have the ability to reassess the way they work.

During the project, new digital accounting training programmes will be developed and implemented for staff in accounting offices, finance departments of companies and the public sector as well as for students in universities. Because of digitalisation and networking, there is a current need for work-life based and flexible studies, especially in the fields of digital service processes as well as business analytics in the accounting industry. The main idea is to offer training programmes that are available anywhere and anytime. The Lappeenranta University of Technology and the Saimaa University of Applied Sciences carry out this education project in close cooperation. They will offer a continuing study path for business people and students in both universities.

At the first stage, cross-organizational teams solved real cases. The purpose of the teams was to identify and solve accounting related development issues between accounting firms and their client companies, regarding processes and analytics in particular. At the second stage, the universities will create new bachelor and master level courses in digital accounting processes and analytics together with companies, university students and regional partners. Finally, the project will organize an international Digital Accounting 2025 seminar to share good practices and experiences. As a result, accounting firms and institutions in South Karelia will receive digital accounting specialists and expertise, and the universities will move towards a new culture of learning.

Keywords: digital, accounting, process, analytics, learning, education

1 Digital Accounting 2025 project

Digital Accounting 2025 is a joint project of the Lappeenranta University of Technology and the Saimaa University of Applied Sciences. It responds to the challenges of the digital revolution. The new era of economics requires changes to business and service processes and opens up fresh opportunities for analytics experts.

The project aims to update the skills of accounting and management accounting professionals to ensure their career development in the rapidly changing world of work. Accounting professionals must be able to convert increasing volumes of data into business-relevant knowledge, and because of digitalisation, they also need to reassess the way they work. Digitalisation and networking create a need for flexible studies that can be carried out alongside work, especially in the fields of digital service processes and business analytics in the accounting industry. Currently, companies have a shortage of this kind of developers.

In this two-year project, teams of company representatives, students and experts collaboratively search for the most advantageous development targets for companies. Based on the work of the teams, Digital Accounting 2025 will build and pilot a continuing education module in digital accounting for accounting firms and financial administration professionals. The first basic courses and advanced courses will deal with digital accounting processes and analytics and will be a collaborative effort of companies, university students and regional partners.

The project also promotes the development of a financial expertise network in South Karelia. The project outcomes and experiences will be shared in an international seminar called "Digital Accounting 2025" at the end of the project. As the online continuing education programme in accounting will be further developed based on the results, accounting firms and institutions in South Karelia will receive digital accounting specialists and expertise, and the universities will move towards a new culture of learning.

Nine accounting firms operating in South Karelia and their 15 client companies are involved in the project. Additional project partners include local and national

trade unions and business development companies, and the South Karelia Chamber of Commerce.

The Digital Accounting 2025 project is co-financed (70%) by the European Social Fund (ESF) and by educational institutions (30%). The project is part of the ESF 4th line of action *Education, skills and lifelong learning,* with specific objectives according to section 9.2 *Improving the availability and quality of education in growth sectors and sectors affected by structural change*. The ESF project code is S20667. The two-year project was launched on 1 September 2016 and it will end on 31 August 2018.

The project has a budget of EUR 257,000. The qualitative objectives of the project are to develop time and place independent training programmes and to promote the development of a partnership network of educational institutions and businesses operating in the area of financial expertise in South Karelia. The quantitative objectives of the project include 24 participating companies and 110 people involved, four 3-credit (ECTS) training courses, and a single 12-credit study path. This combination is produced in close co-operation with the Lappeenranta University of Technology (LUT) and the Saimaa University of Applied Sciences (Figure 1).
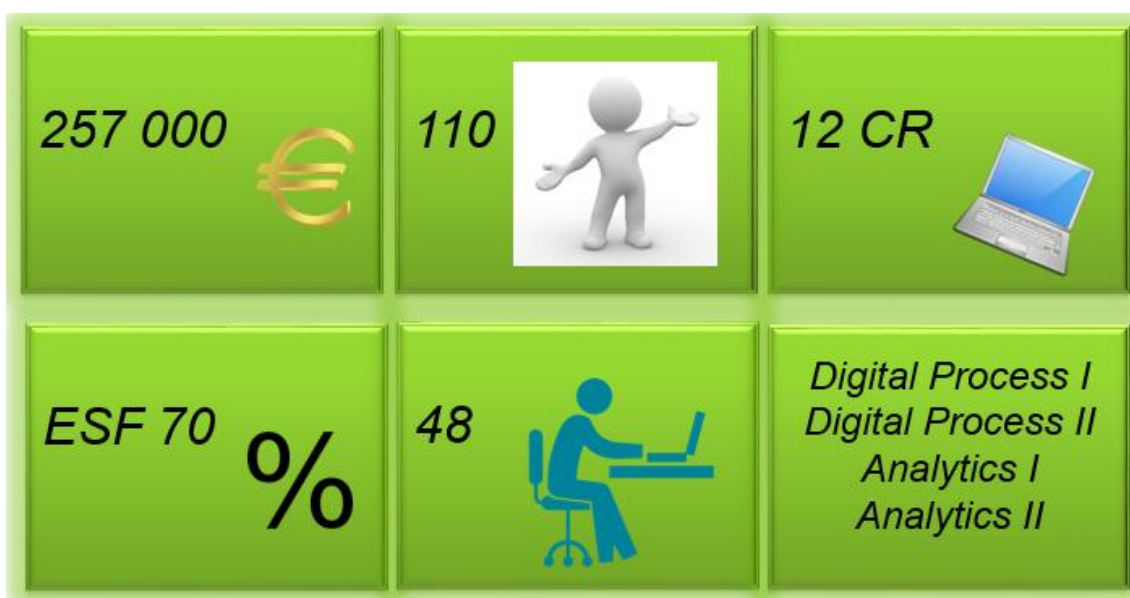

Figure 1. Digital Accounting 2025 main key figures

The content of the Digital Accounting 2025 project is divided into five main phases:

(I)   the start of the project and the opening seminar in September 2016

(II)   case-working phase in the development teams from October 2016 until April 2017

(III)   the development and implementation of new online digital accounting study modules in the area of digital business and service processes and analytics from March 2016 until May 2018

(IV)   promotion of the South Karelian regional expert network in the field of accounting with local partners throughout the project period

(V)   Digital Accounting 2025 seminar as a closing event in June 2018.

2   Teamwork creates community-based learning and e-learning enables continuous learning

After the opening, the project has taken a case-working phase. The aim of this phase was to find real development needs and current topics in business, which could be used to create the contents and materials for the online digital accounting courses. The focus was on small and medium-sized enterprises, and working in development teams was chosen as the working method. The purpose of the teams was to find and solve accounting related development issues between accounting firms and their client companies, regarding processes and analytics in particular.

The case studies involved an inquiry into what digitalisation currently means in the province and what kind of development needs emerge from the accountancy industry and client businesses in this particular geographic area. In addition, a new type of a team was offered as a tool for development and an additional resource. Mostly, large companies have their own accounting teams and development staff, but smaller companies may not have similar resources for development available. Development teams were also seen as a way of working

that could bring the education and work life closer together in a meaningful way, emphasizing co-operation across organizational boundaries.

The idea behind the development team was to bring together students and accounting teachers from two different educational institutions as well as business representatives from the customer and supplier network, in other words accounting service producers and their customers. This emphasizes the customer orientation in development work.

After the case phase, the project will continue with the design and implementation of time and place independent web-based studies (distance learning, e-learning). The main idea is to offer courses to study anywhere and anytime. Bachelor and master studies (4 courses x 3 ECTS credits) focus on two areas of expertise: digital business and service processes, and analytics. The courses are built on the processed cases, casework experiences and ideas. The courses will be piloted step by step with business partners and students by May 2018.

Discovering new aspects of innovation in higher education

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Abstract

The purpose of this article was to present an overview of new forms of learning, teaching and assessment aimed at creating innovation in higher education. Three innovations which are already popular were proposed, offering great opportunities on educational practice. Social media technologies bring great challenges and are being increasingly used for educational purposes. The social media networking tools could be highly effective in the area of collaborative learning, with students working in groups for project research. The findings of learning researchers indicated that video games can be educational and in some cases promote learning through playing .The gaming experience has potential benefits, including cognitive skills and promoting of critical thinking, ethical and science reasoning. Crowdsourcing is the new popular way of using the public as a source for extracting information and opinions. Citizen science involves also members of the public, collaborating in order to collect large-scale data for solving scientific problems. Crowdsourcing techniques could be applied directly to certain fields of education and have also a great impact on various stages of scientific process.

Keywords: social media, video games, crowdsourcing, social science

1   Introduction

Today the big question addressed by academics and educators is which innovating technologies should be adopted. The higher education systems need to be more efficient and excellent in order to contribute to the evolution of the educational system. There is an urgent need to distinguish the strategies to be followed due to the fast advancement of technology. Because of more and more cutting edge technologies appearing continuously, it is always a huge challenge to follow up and the affordances and drawbacks should be considered. This article is a research report focusing on introducing three key trends with major impact on education and especially in student learning and teaching efficiency. The first part of this article reviews briefly the use of social media technologies in the enhancement of the educational process. The second part presents the

findings about the potential benefits of video games in education. The various ways of implementing crowdsourcing techniques in scientific processes are described in the third part. Concluding it is stated that all three innovations have the potential to play a key role in higher education, but their incorporation should be followed by qualitative and quantitative research.

2   Using Social Media for learning

Today the ever growing use of new technologies like mobile devices, tablets and apps has become a major part in our daily lives.One of the effects of this situation was the interconnection of our society through web based applications called social media tools. In the past few years there has been an enormous growth in the use of social networking sites all around the world. The term SNS or "social networking sites" refers to web based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. (boyd and Ellison 2007, 211). The SNS utilize the new web technologies WEB 2.0 and users are able to take part into large social communities where they can collaborate, share opinions and interact online with each other. The previous characteristics make the social media ideal for adaptation in the field of Higher Education.

Social media generally include social networking sites like Facebook and Twitter, blogs and wikis and media sharing websites like YouTube and Instagram. Amongst all these social media tools, the most popular are Facebook and Twitter. More specifically Facebook is an online social network in which users can create and update personal profiles, make new friends, join groups of users sharing similar interests, exchange messages and create and host content. The Twitter platform on the other hand is a social networking site which has implemented a limitation of 160 characters to every post. This gives the opportunity to every user, to post and update several times in a day in an easy and quick mode. A great example of learning and engaging through social media is to follow the social media accounts of NASA that uses a wide range of social networking sites in order to provide different learning opportunities. For instance, every spacecraft has its own twitter account where the followers receive regular updates of the

spacecraft's daily activities. Let us keep in mind the spacecraft Cassini, which after a two decade period in space is bound to broadcast live, via Twitter, the grand finale of its mission. The @CassiniSaturn twitter account is currently followed by 1.440.000 users and the number has an astounding every day increase in view of the termination of the program. Engaging with the NASA community and being able to acquire information about programs and missions, it is vital to have an active social media account connected to NASA Social. For a more personalized experience, NASA offers the gateway SOLVE, the members of which can contribute to advance research and solve potential problems. These projects include crowdsourced challenges, prize competitions and science projects where citizens are involved; of course all the information is being distributed via social media.

Despite the fact that the Web is a considerably useful means for education purposes, there is much to investigate about the benefits of the social media tools in Higher Education. If there could be a function integration of the social media tools into the teaching process, we could implement new educational practices with the aid of the new technologies. The social media networking tools could be highly effective in the area of collaborative learning, since students are encouraged to work in groups for research projects where even the less enthusiastic could possibly be engaged. These tools are also considered to leverage and improve skills like sharing resources, locating relevant data, analytical and deep thinking in a social context.

The social media implements are quite a recent adapted technology in education and a lot of research needs to be carried out before answering the question whether they are rendered useful for content learning. The findings provided by reviews lately, have indicated that the instructors should take advantage of these resources in order to engage the students in an interactive learning environment. The learning is pivotal to be more accessible with the help of collaboration and flexibility that the social tools provide. Another advantage is the autonomy one can gain since the teachers and the students don't have to be in the same location at the same time. Of course, it is an additional challenge for the instructors

because they are obliged to differentiate the educational process and adapt it to the new social media tools.

3 Videogames and learning

Over the past two decades video games have integrated into our daily lives and are quite popular among children, adolescents and adults. The video gaming industry was introduced in the mid-1980s so today we're passing through the fifth decade of progress in this field of evolution. Video games in general are really engaging for the players and everyone is dedicating more and more time in them. The aforementioned industry consists of millions of games each one having a different theme and platform to operate. The huge diversity of their characteristics renders the term very difficult to be defined. When referring generally to games in a broad spectrum, one would have in mind fun and amusement. But what is fun anyway? Altogether the difference between classic games and video games, is the fact that video gamers can interact with each other playing either cooperatively or in competition regardless their place of residence. Also, unlike classic games, in a video game the player isn't totally attached to the storyline, but can follow different routes to reach the end, and this freedom can also lead apart from experiments to failure. This new activity has initiated a whole lot of research in order to distinguish the positive and negative effects of video gaming, having scientists continuously arguing about both sides. There is not strong enough evidence whether video games have more positive than negative effects and the opposite. However, the findings of the learning researchers have indicated that some video games can be educational and promote learning through playing. The potential benefits of these gaming experiences also include cognitive skills and more specifically the ability to solve complex problems, to improve learning related areas like mathematics, history and language learning, and to promote critical thinking and ethical and science reasoning.

A good example about the learning benefits of using a video game in a classroom is Civilization III. In this complex strategy game, the players have to build an empire and manage the economy, culture, politics, military and technology in order to succeed. Of course there isn't a fixed storyline since the game includes 6000 years of history and hundreds of real historical concepts that occurred in

the past. The players can choose from six types of ancient civilizations and thirteen geographical areas, factors that increase the difficulty and complexity of gameplay. K.Squire (2004) working with American Students found that many participants improved their cognitive skills and were motivated to even ask questions about the role America played in the world's history stating facts that weren't documented in school textbooks.

Gee (2005) argues that good video games are learning machines and because they are played by a significantly large amount of users, they have to be learned in a good way. In order to support this argument we have to define the term learning games. In their report Klopfer et' al. (2009) have differentiated the games for training from the learning games. They defined that learning games target the acquisition of knowledge as its own end fostering habits of mind and understanding that are generally useful or useful within an academic context. Learning Games may be associated with formal educational environments (schools and universities, online or off) places of informal learning (e.g. museums), or self-learners interested acquiring new knowledge or understanding. (p.21). Gee (2005) also states that school, workplaces and families can use game technologies due to the embedded learning principles. Good video games with incorporated learning principles in the area of problem solving and understanding could be implemented in the educational system and eventually result in helping the weaker students. The pedagogical value of video games has been referenced by many researchers and M.Young et' all (2012) have summarized the findings of 39 researches categorized in five categories. In their research they report that in subjects like Mathematics, Science and language learning game designers should properly adjust game mechanics and game play in order for it to be more oriented to learner's engagement. It is a fact that virtual game environments and pedagogy in real classrooms have a little in common. In the subject of physical education, video games however were found to have positive effects in student's motivation. Also, in the subject of History video games should not only contain historical details as a context, but allow players to alter their identity and virtually participate in the historical events.

The positive uses of video games in education today are finally clear. Nevertheless we have to admit that video games are not capable of replacing a good teacher in the classroom. In the near future through this situation is bound to change. There is still more to be investigated about the student's level of motivation and the leverage of new skills. We can consider the use of video games as a supplement that aims to engage students and to enhance a great variety of cognitive performance skills. This brings up also the urgent need to start redefining the whole educational system and especially teachers, in order to anticipate the actions to control the vast acceleration of the effects of video games in education and training.

4   Crowdsourcing and education

Crowdsourcing has recently become an indisputably popular way of using the public as a source for extracting information and opinions. We are all aware of the immense content of Wikipedia, but are we truly familiar with the mighty mechanism that has utilized millions of people to contribute to this content? Crowdsourcing is currently used for many and different daily tasks, with platforms like Amazon's Mechanical Turk, where everyone can select a task, contribute and even get paid for it. The term crowdsourcing was first coined by Jeff Howe and Mark Robinson in a series of articles in Wired magazine, as the act of taking a process that was executed before by a defined entity and outsourcing it to an undefined large group of anonymous people. The required prerequisites of crowdsourcing are the open call format and access to a large network of potential workers.

Crowdsourcing techniques could be applied directly to improve certain fields of education because of the benefits they offer with the aid of crowd engagement. H. Bow et al (2013) in their findings indicated that by using crowdsourcing methods, students of the John Hopkins University School of Medicine scored higher on the exams than the students of the previous year who didn't have access to such systems. D. Weld et al (2012) indicated that with the help of crowdsourcing methods the student evaluation system was able to be improved in many ways. Every student could evaluate other students' work and the indirect benefit deriving from it would be better accuracy in the assessments and

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improved future performance originally stemming from the diversity in perspective and expertise of the graders. The crowds that are socially organized are also connected to education, since the motivation can be extended outside the typical classroom and a larger amount of people engaged to acquire data and contribute.

Crowdsourcing methods also have a great impact on various stages of scientific process, giving the ability to non-expert contributors to participate in scientific activities. This form of research collaboration is called Citizen Science, where members of the public gather data in their leisure time and in this way support scientific investigations. One striking example is the online multiplayer game Foldit where nonscientists interact with protein structures deploying user friendly algorithms from the Rosetta structure. This particular model of science has already shown that under the right circumstances the results could be extremely reliabe data that lead to innovations and important findings.

Crowdsourcing methods, despite the benefits they offer to education and science, have as well key challenges to overcome in several areas. The most important challenge of course is the recruitment of the users and simultaneously find ways to preserve and keep them engaged. Also, one of the main characteristics of crowdsourcing is the anonymity of the user. The openness of the procedures result to the common problem of collecting insecure data, so the contributions of the users which are responsible for the content creation, must be evaluated before being pushed deep in the systems. In order to evaluate the users, the type of the contributions should be previously defined. A major problem is always to use an efficient way to combine these contributions. Some crowdsourcing systems do it manually while others use an automated way. Similarly important, are the legal and ethical issues raised by the use of crowdsourcing systems. The methods are in an early stage and it is possible that in the near future we could face uncontrolled exploitation of the contributions due to lack of detailed licensing. The privacy of the contributors must somehow be protected and perhaps an authority should be structured, in order to establish regulations regarding contributors' rights.

5 Conclusion

This article has presented an overview of new forms of learning, teaching and assessment aimed at creating innovation in higher education. Three innovations which are already popular were proposed, offering great opportunities on educational practice. Use of social media is having an increasing effect on student's learning and instructor's teaching, bringing great challenges in collaborative learning. Everyone spends more time daily with electronic devices and especially with video games, where some of them are designed for educational purposes. There is little evidence of how learning can be promoted through playing, but cooperation of game designers along with researchers will eventually lead to creation of good educational videos and support learning. Crowdsourcing is the new popular way to extract knowledge and opinion from the public. Its methods and techniques can be applied directly to certain fields of education and scientific process, bringing new opportunities and new challenges as well. New technologies certainly have a profound influence on education but more qualitative and quantitative research is strongly required before their adaptation in the educational process.

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Technology issues of higher professional technical education

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The foundation of bachelor's and master's degree programs in technical education provides an effective solution to applied tasks. However, studying main subjects and coping with classes require effective technologies. The ubiquity of information technology is obvious, access to information is easy, but what makes a problem is understanding the content knowledge of fundamental subjects. It is commonplace to have difficulty studying mathematics and related subjects. This refers to philosophy, history, mathematics, theory of management, systems analysis, decision-making and other subjects. Today there are numerous study books, courses, information technologies and other ways of information delivery to the human mind. However, improvement of vehicles for information delivery cannot solve a problem of nurturing highly qualified professionals. The problem of specialist quality also needs discussing not only in terms of criteria, but in terms of criteria's compliance with goals and objectives in training professionals.

Below we consider one of the approaches to solving the stated problem on the basis of information properties in the process of delivering information to a student during studies. The goals of discussing the approach to education are obvious – to find an effective solution to the task – coping with professional subjects to the extent that would allow using professional methods in tackling research and engineering problems. Professional subject teaching should be based on several principles, stated below.

"Categorization principle" implies emphasizing in *student* minds main objects (categories) of subjects, which are natural phenomena, models of these phenomena, used in artificially created systems, as products of the professional activity [1].

Such "*mental synchronization*" can stimulate perception of original objects. Moreover, such "synchronization" will ensure "*discomfort reduction*" in the intellectual labor, which for some students is often "intellectual torture", rather than a regular process of acquiring new knowledge. It can be noted that in the above-mentioned situation the "*process of acquiring new knowledge*" can lead to disappointment and frustration. In order to find a solution to the problem under study, it is possible to turn to experience of older generations, who recommend "hitting the books". However, technologies for this are often reduced to several pieces of life advice that fails in education.

This raises the question: what can be done in this situation? The answer can be found in the philosophical theory of knowledge, which states that the principle of education divides the initial difficult task into a number of subtasks, resulting from the decomposition of the educational process. This decomposition implies the following stages – feeling, perception, awareness, adoption. This consistent growth of human intellect helps a student or a teacher to move to a new stage of the intellectual level.

These objects of mathematics and mathematics-related technical subjects are linear or nonlinear algebraic equations, differential, difference or integral equations. When presenting some new material, it is advisable to emphasize regularly a new class of models in order to encourage students to use operational mathematical methods; this illustrates universality of mathematical tools, universality in description and quality analysis of processes and phenomena. As a result, students realize the necessity to classify reality models using mathematics. Watching the students, we can draw a conclusion about some "static" perception of main mathematical objects, their detachment from practical tasks. Answering the question about possible operations with the introduced mathematical objects (categories), we often hear "equations can be solved", "functions can be differentiated" etc. However, tasks are solved using a wide range of operations with objects. Skills, which are required to carry out operations with the mathematical objects, are determined by "*dynamism principle*" [1]. This implies targeted teaching aimed at carrying out various operations with mathematical objects, including differentiation, integration, decomposition etc.

The type and sequence of operations with objects are determined by methods of task solving. Consequently, task solving methods are formulated in the form of operation sequence – algorithms.

Such an algorithmic procedure of teaching when the main objects, operations with them and results are postulated, can be expressed as evident schemes that allow illustrating a solution method [1]. But such a technology is often criticized as it is connected with a "prescribed approach" to teaching. The first stage of education requires those methods and algorithms that bring success. The following stages may be called as "system technologies" formation stages. Such technologies are sometimes used in the form of tables of addition, subtraction, multiplication and division in a school course of mathematics.

A wide variety of main objects in professional subjects and a set of operations performed with them require structuring of knowledge of the studied objects. Structuring means formation of objects, main operations with them and determination of operation results in all their variety.

Such tables can be made for all the courses listed above and define the foundation for studying appropriate sections. They can make sections of the course with an approximate name "Mathematical Devices and Methods of the Discipline". The study shows that such an approach improves perception of the stated methods. For example, when studying Laplace transformation in the Theory of Management course, students already know that Laplace transformation is one of many types of integrated transformations for linear differential or integral equations. They also know that Laplace's transformation is not the only type of integral transformations. Therefore, the Fourier transform applied to linear differential or finite-difference equations provides the control systems research device in the form of frequency characteristics which are a single-parametric family of complex numbers represented in various forms. The result received after the transformation has a directing effect upon perception of difficult tasks, as students are prepared for classification of transform results, and can turn to result analysis. What matters for education is the result of the transformation and its interpretations.

All the principles listed above (categorizations, dynamism, structuring and cohesion) are not enough for successful mathematical studies [1]. However, if teaching is based on such or a very close scheme, the probability of successful learning increases significantly, as the teacher does not only present the material, but also gives a method of its learning and adoption. D'Alembert said, "Each finding is perfect itself, but the method used to obtain it is much more perfect". This is exactly the case that proves this statement. Unfortunately, students often have to learn on their own how to generalize information, while revising for their examinations without being supplied with an affirmative approach. The efficiency of such an approach to education is extremely low, as students cannot find a key to subject understanding on their own at the beginning of the course. The offered approaches to education and teaching reject smooth scheme of teaching with "knowledge extremum" and give an opportunity to see acquiring new knowledge as a very difficult and contradictory process of obtaining a new result.

Thus, the above-mentioned principles cover viable forms of teaching, and the process of effective education and teaching technologies formation needs to take into account personality traits and psychology of students and educators.

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Preparatory course in mathematics using the mobile app TeachMatics

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Abstract

Gaps in basic math knowledge are among the biggest obstacles to a successful start in university. Students starting their studies in STEM disciplines display significant diversity, "math anxiety" is a widespread phenomenon, and the transition to a self-determined way of studying presents a huge challenge. Universities offer support measures such as preparatory courses. Over the years, Offenburg University realized that with increased diversity, traditional ways of teaching in front of the class have become inefficient. The majority of the students remained inactive and just listened to the teachers' explanations and the few active participants' answers.

Since 2013 our new course concept fosters a shift from teaching to active learning on a large scale, involving several hundred participants of our on-site preparatory math courses. This switch to broad active practicing, however, must go hand in hand with providing individual support for an increasingly diverse student body. Meanwhile students bring along their mobile devices, and the training App TeachMatics serves as a facilitator. The course concept has been very well received by both students and teachers.

Keywords: Preparation course, mobile learning, activation, seamless learning

1. Background

In an economically strong, technically highly developed region in the center of Europe, we must be concerned about the possible lack of skilled staff for STEM professions. Offenburg University strongly invests in programs aimed at attracting the human potential and resources that are available in our region and enabling as many motivated students as possible to complete their university degrees. Gaps in basic math knowledge, however, are among the biggest obstacles to a successful start at university. At Offenburg, mathematics constitutes an

accompanying science for applied studies in engineering, computer sciences and economics.

Even students motivated for the STEM professions reveal a significant diversity in terms of prior mathematical knowledge, ways of studying, and eagerness to learn. "Math anxiety" is a typical phenomenon. Today's beginning university students come from very different types of schools and professional career paths. Major problems that universities face as a result (Heublein, Hutzsch, Schreiber, Sommer & Besuch 2010); (Fischer & Biehler 2011); (Brugger, Threin & Wolters 2012) include

- students' lack of routine in fundamentals such as basic algebra, and

- students' difficulties in finding their individual, self-defined learning styles.

To reduce the risk of students feeling overburdened right at the beginning of their studies, Offenburg University offers preparatory courses on a voluntary basis. These take place for two weeks before the start of regular classes, with a daily schedule of three hours of math (in addition to other preparatory and orientation offerings). Around 400 participants are divided into groups of ca. 35 to catch up on essential school knowledge.

Over the years, the traditional way of teaching in front of the class had increasingly received criticism. A high number of students left the preparatory courses after only a few days. Interviews showed that more and more students could not keep up even at the entry level and/or felt that the teaching pace was too fast. Even when the lecturers interacted with the students, the overall pace was determined by the answers of the stronger students, whereas the weaker ones typically remained inactive. They felt overburdened and not satisfied with their perceived learning progress (Figure 1).
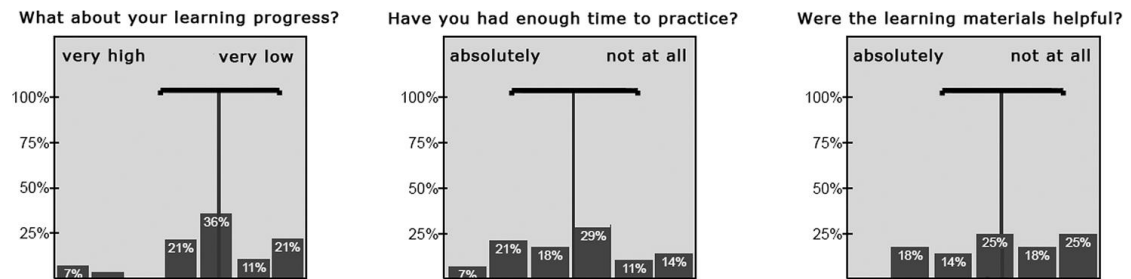
Figure 1. Alarming results of the evaluation (December 2012).

2. Cooperation with MassMatics and development of preparatory course in mathematics

In a cooperation project with the start-up company MassMatics, the concept of the app-supported preparatory course was developed in 2012 and has been used in all math preparatory courses at Hochschule Offenburg since the 2012/13 winter semester. The more than 500 tasks of algebra, geometry, functions, differential, integral and vector calculus provide the students with step-by-step help on three difficulty levels as well as references to extensive theorems to refresh the school material. The authors of MassMatics were all tutors with extensive teaching experience at schools and universities, who were well aware of students' typical problems of understanding. The hints are given in a colloquial language that is easily understood by students, at the same time as correct in mathematical terms. The hints also typically appear as open questions, to foster the students' own reflection. The app thus assists in exploring a complete solution step-by-step and supports active discovery learning.

The existing MassMatics app was then further developed and adapted to the needs of universities. The resulting app, TeachMatics, is now used at about ten further universities in Germany.
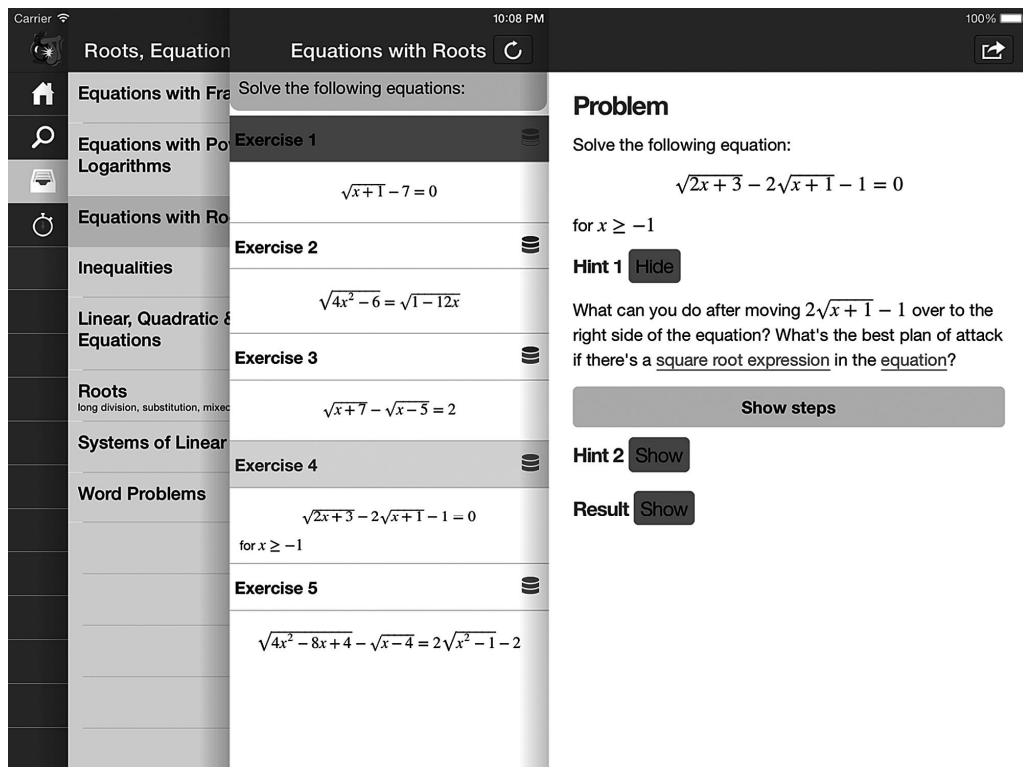
Figure 2. Math App provides hints and theory on demand.

3. Integration into the on-site preparatory course

Our new course concept fosters a shift from teaching to active learning on a large scale, affecting several hundred participants of the on-site preparatory courses. Today's students bring along their mobile devices and the training app TeachMatics serves as a facilitator: When working on an exercise in classic pencil-and-paper fashion, students can open hints step-by-step, partial solutions or hyperlinks to broader explanations exactly when and where needed (Figure 3). The hints given in plain 'tutoring' language here complement the more formal language of the teacher. This switch to extensive active practicing requires individual support, given students' significant diversity in terms of subject knowledge and educational background. Frontal teaching, therefore, is strongly limited for the benefit of active-practice phases. To promote students' active learning, the teacher stands back during the practice phases, primarily answering questions that remain after working with the app. The teacher also keeps an eye on the solutions that arise on paper and, together with the learners, reviews individual learning strategies and the handling of the available help

arrangements. Alternative approaches are often discussed as well. With the help of the app, every student can work at their individual level and pace. Teachers in turn can concentrate on unanswered questions. As no PC equipment and not even Wi-Fi access is required, with students bringing their own mobile devices, courses can be held in any standard classroom (for up to 40 students), and several hundred students can be served in parallel. Furthermore, after leaving the on-site training session, students can continue using the math app for help at home (or anywhere else).

Figure 3. Classic pencil-paper format with support from the app.

4. Evaluation

More than 2500 students have by now participated in the app-based preparatory courses at Hochschule Offenburg, using a training package that includes more than 500 exercises, and all courses using the app support have been evaluated. The following evaluation methods were used: Attendance lists (to monitor the drop-out rate of the course), usage data, and student feedback gathered through a questionnaire (with questions on the distribution of theory and practice, training materials, estimation of the learning progress, and support by the app). In addition, a pre-test and post-test monitored the learning progress, and teachers' feedback was gathered through a questionnaire as well as interviews.

The feedback to the new concept, both from students and teachers, has been exceedingly positive. Detailed evaluation results were published in "Mobile Learning and Mathematics" (Decker, Meier, Claus, Koschig, Christ & Hillenbrand 2015). Some highlights of the findings are:

- 88 % of the respondents "agreed" or "completely agreed" that the math app matched the course contents well.

- 94 % found the math-app exercises "helpful" or "very helpful."

- "82-95 % of the respondents would recommend the math app to other students.

- Asked what they liked most about the app as part of the preparatory course, 86 % answered "Studying at my own pace," and 85 %, "I can open hints and explanations where needed."

In our scenario, mobile learning is embedded in an overall didactical on-site course concept (plus seamless off-site continuation). From a didactical point of view, we reached the goal of broad activation during the first contact with math education at university. A major success is that the active practicing phases worked smoothly; that the rate of students leaving the preparatory course prematurely has been reduced significantly; and that the evaluations have shown a high satisfaction with the course concept and app support (Figure 4).

From the students' perspective, the fact that support of one's individual studying pace and coaching on demand were rated as the most helpful aspects of the new concept shows that students are well aware of their diversity. In all seven runs, between 95 and 99 % of students providing feedback stated they would recommend the TeachMatics app to others. The usability of the app, too, was rated very positively by students.

Figure 4. Comparative evaluations with new concept (2013).

5. Further development and school cooperations

Since the launch of the project, we have been particularly gratified by the attention the MassMatics app and the new course concept have received at conferences and in publications.

The broad interest and awards such as the 2014 **eureleA** (European Award for Technology Supported Learning) and the Best Paper Award (audience vote) at the 2014 DeLFI (e-learning informatics symposium of the German Informatics Society) gave us a strong support and helped us to initiate regional cooperations with high schools and vocational institutions, and to improve the app continuously. For example, videos and multiple-choice quizzes can now be integrated to support various interactive elements.

Following the preparatory math courses, we also found that the math app concept can be used in a number of other, formal and informal learning settings, such as in 'crash courses' or as part of our Learning Center's offerings.

It is a strong intention of Offenburg University to make prospective students – and their teachers – aware of our app-based university-preparatory training packages well ahead in time, so they can effectively tackle the math fundamentals required in higher education as much in advance as possible.

Since 2014, more than 20 such math courses on the secondary-school level have been supported in cooperation with the schools. The experience gained in these cooperative projects in turn has led to the creation of new tasks for the training

package, while secondary-school teachers were provided the opportunity to incorporate proven and adaptable e-learning concepts in their school lessons.

In the meantime, as requested by our students, additional modules for physics have been developed, which are closely connected to the math app contents.

As students' educational paths into university have increasingly diversified, it could be a long-term goal of our work to establish the study app for STEM basics as an integral, natural companion of the entire basic study period. Today already, the app accompanies a few introductory lectures in math and physics at Hochschule Offenburg to stand the test as an effective self-study tool for orientation and training.

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Distance Learning for Health Care Professionals – Challenges Opportunities and Solutions

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Abstract

The research was done in the framework of an internal scientific project grant of Riga Medical College of the University of Latvia. The research is only a minor part of the project. The research contains literature analysis describing distance learning in the medical field, not only in Latvia, but also in other countries. Duration of the project: 20.01.2016- 30.05.2017.

Aim of the research: To trace opportunities and motives for new vocational further education programme implementation for medical personnel, distance learning course development, evaluation and piloting to the medical staff of rural regions.

Results: There is a low supply of vocational further education in medicine in the form of distance learning and the majority - 61% of nurses and physician assistants have never used such materials, while 77% of respondents acknowledge that distance learning is necessary. The main barriers, interfering with successful learning according to 33% of respondents are lack of time and lack of self-motivation (28%). The interactive distance learning materials, developed within the project, are very interesting and of high quality, as the respondents evaluated with 5 and 6 points (in 6-pint scale).

Conclusion: continuing education for medical personnel is little known, but very necessary. Distance learning is needed not only for broadening the supply, but the necessity is also determined by the demand, which is attributed to the time and financial savings.

Keywords: distance learning, e-learning, e-studies, information technology, education.

1. Introduction

Currently, the majority of students studying in higher education institutions belong to the generation of information technologies, which grew up with continuous access to information technologies and the Internet. Lecturers have to adapt teaching and teaching methods in accordance with the students' skills, requirements and needs. In recent years, distance learning is gaining great popularity, because it is considered to be a convenient, cost and time-effective

way to acquire knowledge (Bjarne, 2013; Mehrdad et al, 2011; Smith, 2009; Ehlers, 2004). In Latvia, distance learning is evolving quite slowly even though it is very popular in the rest of the world in various disciplines - economics, linguistics, business administration. The survey data show that distance learning will play an important role in the education system in the future. Taking into account the economic situation in medicine and improving the quality of education of medical personnel, making it more accessible, in January 2016 work has started related to the internal scientific project grant of Riga Medical College of the University of Latvia (RMC UL): "Distance Learning for Health Care Professionals – Challenges, Opportunities and Solutions". The project consisted of two parts: 1) scientific and research part, the results of which are described in this publication; 2) development and implementation of interactive distance learning courses in an e-learning environment, for vocational further education of medical personnel. Duration of the project: 20.01.2016- 30.05.2017.

2. Characteristic and research of distance learning

Distance learning is a form of learning that can be used by medical personnel - nurses, nurse assistants and physician assistants at their workplace in on-line mode, transferring information to other practitioners; meanwhile the new knowledge can be immediately applied in practice, thus improving health care quality across the territory of Latvia.

Paragraph 26 of Section 1 of Law on Education defines distance learning as follows: "*An extramural method for acquiring education, which is characterised by specially structured educational materials, individual speed of learning, specially organised evaluation of educational achievement, as well as use of various technical and electronic means of communication*" (Law on Education, 1999). The positive aspect of distance learning is the distance learning is a form of education, where everyone can learn at his own time, place and pace, while the students have to be motivated, able to organize themselves for active learning work (Ivanova, Kristovska & Slaidiņš, 1999).

Distance learning is an old idea with a new name, as distance learning as a form of education has been used since 1700, when the learning materials were

delivered by horse cart, and later around 1900, using the postal system. During the period of time from 1920 to 1960 distance learning was carried out by means of electronic data transmission - radio, television (TV), since 1970 to 1980 pre-recorded cassettes were used. During the period of time from 1980 to 1990, teleconferencing, videoconferencing and TV programmes began to be used in distance learning (Harper, Chen & Yen, 2004). Nowadays, computer-based training is used in education, which may be realized in several ways. The computer-based education can be carried out asynchronously, when the information technologies (IT) are on their own, communication takes place via e-mail and notice-boards. Synchronously, which is carried out in real time with an instructor, lecturer, who is logged in, so everyone can directly communicate with the lecturer and with each other. Independent learning - the student himself undertakes step by step studies certain educational materials and perform certain tasks, the importance of self-control (Naidu, 2006).

Analysing the literature, distance learning is considered to be equally effective way of learning as traditional learning – full-time lectures. Nowadays distance learning is studied and analysed from several aspects in professional literature. Studies have shown that distance learning as a form of education attracts a wide range of students: it is accessible to people with special needs, it is possible for people who are staying outside their country (Jefferies et al., 2001; Slaidiņš, 2005; Bjarne, 2013; Mehrdad et al., 2011).

Distance learning in many countries around the world gained a stable position in the education system, including the medical field. Medicine is an area where critical thinking, experience is in most in addition to the theoretical knowledge, thus the teaching aids need to be prepared so that the knowledge and skills to be acquired also in the form of distance learning. Therefore, often distance learning is combined with full-time studies during the studying process (Smith, 2009). Similarly, a profession of nurses, physician assistant is a practical profession, where the skills, competences applied in practice must be mastered, when it is not enough with the theory: administering injections, patient feeding, insertion of the probe, etc. procedures. Due to the spread and development of information and communication technologies (ICT), there are a number of positive aspects:

for example, the choice of learning time and place is not so important argument; thus, learning materials addressed for a wide target audience can be used. Using multimedia technologies available today, learning materials may be interactive, thereby enhancing the motivation to learn the subject. One of the latest methods of distance learning used in medical studies is the virtual clinical situation with real patients, which is asynchronous (a student works at his own time, individually), versatile environment for a student, where he can work with a virtual patient (Lowery & Spector, 2014). A lecturer has an opportunity to test knowledge of the students more quickly and easier in the e-learning environment, employing different, including automated knowledge testing forms, which save time and provide immediate feedback (Burns, 2010; Ghasemi et al., 2016).

3. Methodology

Quantitative method is selected in the research – 2 surveys. The first survey took place starting from 01.03.2016 to 01.05.2016, the aim of which was to track opportunities and motives for implementation of forms of new vocational further education programmes for medical personnel. The research was conducted in various Latvian clinics, as well as electronically, sending a questionnaire with emails of health care professionals. Written ethics commission findings on the survey to be conducted were received from the clinics. Participants of the research: nurses, physician assistants, nurse assistants. In general, 200 questionnaires were distributed and 500 questionnaires were sent electronically. n=210 of respondents participated in the research.

The second survey took place starting from 01.09.2016 to 30.11.2016, the aim of which was to evaluate the interactive, methodological materials developed in the framework of a distance learning course in order to implement distance learning. Participants of the research were the students of the RMC UL, respondents, who previously have acquired qualification - nurses and physician assistants, who are currently studying in one of the distance learning programmes in the college. Before completing the survey, respondents were registered for distance learning course within e-learning, where interactive distance learning course materials were available and developed. Topic of the courses: "Module 1. Wound Care Basics", containing the topics: anatomy and functions of the skin; damages of

skin integrity, wound classification and care basics. Respondents were given time to try and get acquainted with these materials, take the self-test tasks and tests. Learning course assessment shall be made after adoption of the course material. In total, 138 respondents were registered for distance learning course. Piloting of the distance learning course was carried out by and the survey was taken by n=55 respondents.

4. Results and discussion

In the research, which aim was: *"to track opportunities and motives for implementation of forms of new vocational further education programs for medical personnel"*, 210 respondents took part, 85% (n=179) of them were nurses, 7% (n=14) were physician assistants, 7% (n=14) of them were nurse assistants and 1% (n=3) of them were other care professionals.The research included respondents of different primary specialties – surgical nurses, internal nurses, outpatient physician assistant, etc., but the survey results show that 44% (n=90) of respondents are not certified in one of the primary specialties. The research included respondents aged from 22 to 75 years, 67% (n=141) of respondents were in the age group from 22 to 49 years, relatively large number of respondents were aged from 50 to 75 years - 33% (n= 69). The average age of respondents is 44 years.

Summarizing the results obtained, relatively large number of respondents, 61% (n=126) of respondents have not used professional development courses of distance learning before, which shows that distance learning may be a new, unknown form of education for the research respondents. Possible obstacles while acquiring knowledge through distance learning, 33% (n=69) of respondents mentioned lack of time, 28% (n=59) of them mentioned lack of self-motivation, because they have to plan a learning schedule by their own. Also, other factors are possible, which have not been identified in the research, for example, non-binding course topics, lack of information access, quality of the materials offered, costs of the materials offered. A positive indicator is that 27% (n=57) of respondents have been used the opportunity to learn subjects in the framework of distance learning before, offered by websites e-visit.lv and medkursi.lv. This result indicates the interest and desire to use professional development courses

for distance learning. Such an interest was also expressed in the research, summarizing the results obtained, assessing the need of distance learning courses, where a total 77% (n=160) of respondents acknowledged that professional development in distance learning is required, where among 77% of respondents, 50% (n=104) of them noted in the survey that professional development in distance learning is required and 27% (n=56) of them pointed out that it is highly required (see Table 1).

Table 1 The respondent evaluation of the sufficiency and necessity for distance learning courses (n=210)

Whether professional development courses – a form of distance learning is currently sufficient?	Evaluate the necessity for distance learning courses:				In total
	Not necessary	Partly necessary	Necessary	Highly necessary	
Yes, it is sufficient	1 (0,5%)	9 (4%)	36 (17%)	9 (4%)	55 (26%)
Yes, it is, but the choice is tiny	1 (0,5%)	8 (4%)	24 (11%)	23 (11%)	56 (27%)
Not, it is not sufficient	0	4 (2%)	15 (7%)	15 (7%)	34 (16%)
I do not know	2 (1%)	24 (11%)	29 (14%)	10 (5%)	65 (31%)
In total	4 (2%)	45 (21%)	104 (50%)	57 (27%)	210 (100%)

Speaking of the issue regarding the current situation of professional development and the sufficiency of professional development courses for distance learning, 26% (n= 55) of respondents think that there are currently sufficient distance learning courses in Latvia, while 19% (n= 39) of respondents out of 26% (n=55) believe that distance learning courses are required and 4% (n= 9) emphasize that they are highly needed. It is possible that respondents have thought of the real situation with the distance learning courses as a whole, taking into account not only the distance learning form, but also full-time courses, represented by a large range and the choice of variety of the themes is available. In order to implement the project, it was very important to find out which medical topics the respondents are interested in to study during distance learning (*see Table 2).* Summarizing the results of the research and sorting priorities among the topics offered, 38% (n=80) of respondents admitted that primary health care is the most important

topic. The result could be related to the mandatory requirement of mastering the subject in order to maintain the Register of Medical Persons and for certification. The second most important topic admitted by respondents is wound care - 33% (n= 68), while the third most important topic admitted by respondents is mental health care - 28% (n=59).

Table 2 The priority the distance learning course topics in the form of distance learning (n=210)

Topics	n	%
Clinical, Diagnostic Procedures	56	27%
Implementation of the Care Process in Practice	53	25%
Wound Care	68	33%
Cardiovascular Diseases and Patient Care	34	16%
Gastroenterological Diseases and Patient Care	28	13%
Abdominal surgery and patient care	22	11%
Care of the Injured Patients	39	19%
Primary Health Care	80	38%
Patient Care in the Perioperative Period	12	6%
Lung and Respiratory Passage Diseases and Patient Care	23	11%
Mental Health Care	59	28%
Diabetes Mellitus and Patient Care	46	22%
Enteral and Parenteral Feeding	35	17%
Other	30	14%

Interest in wound care may be related to the fact that according to the data provided by the Central Statistical Bureau of Latvia (http://www.csb.gov.lv), population aging is observed among the inhabitants of Latvia and coverage of senior citizens is relatively high. Chronic wounds, such as venous and arterial trophic ulcers can be observed among the senior citizens, therefore, representatives of different specialties are increasingly facing the question related to the wound care - doctors, physician assistants, nurses, nurse assistants and pharmacists. Theoretical and practical knowledge of proper wound care suitable for the wound condition, the ability to apply them are the factors that affect the wound healing process, the patient's quality of life and costs of medical institutions and patients (Franks, Barker, Collier, et al., 2016). The topic was chosen based on this topicality: "Wound Care", which was included in the further implementation of the project, developing of interactive distance learning course materials, their approbation was completed= 109) of respondents would best learn the subject, using reading materials and 40% (n=83) of respondents using video lectures. The result shows the preferred and most appropriate learning methods for respondents, as well as the result can be related

to the fact that currently other learning methods are not available and perhaps little known and used by the nurses, physician assistants in Latvia, such as interactive materials, which can be both listened and read. Also, you can test your knowledge and cooperate, as well as a few lectures are available online, where you can not only listen, but to create immediate feedback as well.

In the survey, which aim was: *"to evaluate the interactive, methodological materials developed in the framework of distance learning course in order to implement distance learning",* n=55 of respondents participated, among them 82 % (n= 45) of respondents had a qualification as a nurse and 18 % (n=10) of respondents had qualification as a physician assistant. The mentioned respondents are the students of the RMC UL, studying one of the primary specialties of distance learning. Evaluating the quality of materials developed for the distance learning courses, 46 % (n= 25) of respondents rate them as perfect and 53% (n=29) evaluate them as excellent, 1 respondent rates them as good, which is a positive indicator to continue the current work related to interactive materials. Positive assessment was also provided on the material content compliance, where 89% (n=49) of respondents believe that the content is fully in line with expectations, while 11% (n=6) of respondents point out that it is partially meets the expectations that might be associated with previously acquired knowledge and the desire to learn something new and unknown. Similarly, 31% (n=17) of respondents admitted that the interactive materials were interesting and exciting to the fact that interactivity has been used, which means active participation during learning, while 67% (n=37) of respondents acknowledged that the materials were interesting and exciting because of the ability to test their knowledge. The self-test of knowledge is one of the essential preconditions while developing of distance learning materials, it is important for the student to actively participate, the opportunity to check, solidify the acquired knowledge, which in turn increases the learning motivation.

Developing and offering the distance learning course, it was important to identify whether respondents have faced any technical difficulties in acquiring the materials. The results show that 67% (n=37) of respondents had no difficulties, while 46% (n=25) of respondents have faced partial difficulties, such as acquiring

the interactive materials, they sometimes did not know what to open, where to click, which again requires a review and work on the information underderstandability of the prepared materials.

Course material, which was piloted by respondents, is equivalent to 4 academic hours, 66% (n=36) of respondents admitted that the developed course material meets the established academic hours, while 35% (n=19) of respondents need more time to acquire such materials. The result is explained by the fact that each person has his own learning style and speed, so not for all people using distance learning will be an acceptable form of education. Therefore, high self-motivation is required to learn such material, which requires longer learning time. A positive indicator is that 66% (n=36) of respondents are willing to pay for the developed distance learning course.

Conclusion

A very low supply can be observed in professional development distance learning courses in medicine, the majority of respondents (61%) have never used distance learning, hence such a learning method could be a new and unknown one for part of the respondents. The necessity of distance learning courses is justified not only by broadening the supply, but also by the demand, which is determined by financial and time resource economics, allowing an individual study time frame. Nurses, physician assistants and nurse assistants report a strong desire to take a distance learning courses in such topics, as Emergency medical care, Wound care, Mental health care, and such Clinical procedures as Enteral feeding and nutrition; the quality of distance learning material and self-testing is essential. The distance learning course materials, developed within the project framework, are of a high quality and the methodological material is sufficient for participants to successfully complete the course, however the major hindering factors are lack of time and self-motivation.

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Multicultural nursing collaboration to improve medication safety in Nordic countries – MEDICO intensive course 27. - 31.3.2017

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Abstract

Bachelor and master students of nursing and nursing teachers from Finland, Denmark, Iceland, Norway, Åland and Sweden participated in a Medication Safety course organized by MEDICO – Nordplus Network. The course took place at Saimaa University of Applied Sciences in Lappeenranta, Finland. The aim of the course was to provide an overview of what medication safety consists of, in order to increase students' awareness of the meaning medication and patient safety in their roles as registered nurses; and to learn about the differences in practices between Nordic countries. The next course will take place in Iceland.

The course was divided into five working days. The days included lectures by teachers, student workshops, panel discussions, a study visit to the local general hospital. The themes of the lectures were Medication Safety, Safety Culture, Interprofessional Collaboration, Challenges in Medication Administration and the Best Practices in Medication Safety.

Keywords: nursing students, medication safety, co-operation

What did we learn

The role of the nurse and the awareness in the medication safety has increased. The safety culture need to be part of the everyday work. We need professional debate and collaborate with patients, doctors and pharmacists.

Errors and nearby situations are reported to the HaiPro system. It´s important to identify where and how mistakes and errors can happen - is the reason human error, rush, not double-checked things, interruptions at work or something else.

The role of the administration is important for the safe culture and it should bring new evidence based nursing into practice together with the staff. Nurses must keep the knowledge updated all the time. The new technology and

pharmaceutical forms has also become to use. The good guidelines and best practices are worth to try. We should see what kind of education or discussion on ward or clinic is needed. How to promote the medication safety? The safe culture is taken for granted, but errors can occur. We must learn from mistakes, errors, and "almost happened" situations. The way in which they are handled, need to be supportive, not blaming, but we have to take responsibility for our actions.

In the beginning of the course the students had presentations of education of the health care professionals and how in their countries nurses have been involved with promoting medication. During the week we discussed a lot about problems but also about the best practices. The legislation and instructions seems to be quite similar in Nordic countries. Good communication at all levels, between patient/client,- nurse-doctor-other staff is important. It was very interesting to meet local ANP-nurse/clinical nurse and nurse manager and hear their roles and work in the central hospital.

The students got some tips how to do team work and get staff interested to medication safety, the evidence based practices are needed. Healthcare professionals and administration must develop reporting systems further. Good literature, resources and references are waiting for us to show the importance of this issue. The course was really good repetition for students and gave a lot new to think about. Working in international group and how the things are done in other countries and how it should be done in each student's home country.

When we look to the future, we need more and more spread awareness of the safety medication. We need to give also more patient education to our clients. Main task is the patient centered system and empowerment of the patient to take part for his or her own medication.

Learning can be fun

The week included work and free time activities in good balance. The free time activities brought the group together very well and gave chance to learn more about the life and work of the students in other Nordic countries. The outdoor activities, like ice floating was fun. We tried also bouldering climbing.

The students started to network during the week and will keep it going in their own Facebook– group. Our host the Saimaa UAS had good facilities by offering meals, coffee and cakes. The most fun was to meet new people from different countries. We also learned and taught the saying "No niin" to foreigners. It can be used always and everywhere.

We made just a video-
Towards media competencies in
Social Work education

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Abstract

The use of new media technology is an expanding reality and connect formal and informal practices in our every day life. The higher education student´s learning events are more often outside the classrooms in open environments and communities created online in local and global mobile networks (see. Frau-Meigs, 2013; New London Group, 2000; Nohl, 2007). These transformative conditions enable participatory culture (Jenkins & al. 2009) and newly formed competencies and new kind of knowledge and skills are implied in the new users and forms of media. How do then educators ensure that these conditions become a part of higher education practices?

This article reflects upon the kinds of pedagogical interventions that can promote higher education student's media competencies. The study is based on second year social work student (N=102) Media Skills and competences -courses (5ct), which was held in fall 2016 and spring 2017. The aim of the course was to enable understanding the effects of changing media environment and some media-related methods in their own work.

The results show that hands-on media education, particularly media participation, offers various opportunities for students to promote their media competencies. However, the successful adoption of media competencies in educational settings depends upon an explicit understanding of the goals and means of media education. Thus, there seems to be a need to improve the pedagogy to to ensure the student's media competency development.

Keywords: media competence, multiliteracies, participatory culture, higher education

At the intersection of formal education and the use of new media technology

The higher education student is learning events are more often outside the classrooms in open communities created online in local and global mobile networks (see. Frau-Meigs, 2013; New London Group, 2000; Nohl, 2007). These communities could be called participatory culture (Jenkins & al. 2009), which

means that the participation is characterized by inclusion, transparency, convertibility and the use of new media technologies in global context (Mäkinen 2000, 83, 87). In participatory culture, the cultures can be extremely interconnected and entangled with each other (see Bradford, Allen and Beisser 2000, 36). Thus, the idea of learning is distinct from formal higher education in many ways. Participatory culture enable spaces to mix formal and informal learning, such as blogs and wikis, which Gee (2004, 2005) calls "affinity spaces": students can participate in various ways according to their skills, interests, age, gender and educational levels. Affinity spaces therefor offer powerful opportunities for learning. Despite the potential enhancements, the transition might also be challenging. It still seems that the teachers and students feel more comfortable with traditional education and are often resistant to change (Nummenmaa, 2007). How then to promote social work students media competencies in a higher education context?

The pedagogy of Multiliteracies by New London Group (1996), provides a framework by challenging learning in fast-paced world driven by the need to communicate across multinational boundaries and multiple modes (Jacobs, 2012). In Finland concept of Multiliteracies is a part of new national core curriculum commissioned fall 2016 (POPS 2014). It should prepare students at the same time to interpret, to produce and to evaluate different kinds of multimedia texts, and to understand diverse cultural forms of communication to build identity (e.g. POPS2014, 20-21; Jenkins & l. 2009; Lankshear & Knobel 2011). At this sense, Multiliteracies as a pedagogy provides for students authentic situations and needed skills, for example simulation in some social media solutions such as Facebook. From that perspective the knowledge building paradigm refers to the idea of knowledge building communities and engaging students in the process of creating knowledge collaboratively, advancing "the frontiers of knowledge" (Scardamalia & Bereiter, 2003).

To enable understanding of students individual life worlds, biographical method called media life study (Kotilainen 2001; Koponen & Kotilainen 2017), was used to promote student media competence. The method has been applied earlier as a reflective method for teacher student's media relations (see. Kotilainen 2001)

and as a biographical life studies in international Media Education in University (see. Koponen & Kotilainen 2017 in press*).* In this study, the method was chosen, because it makes possible each students individual narrative, to reflect their experiences, to enhance their learning in collaboration, to improve their media competences, and to apply the method for future social work.

Method

This study is based on Media Skills and Competencies –course, held on fall 2016 and spring 2017. The strategic dimension was to unveil an awareness of media experiences in participation culture, and to give at least one memory-based media pedagogical method. After completing, the course students should gain an understanding of media uses and practices form cultural perspectives in a socio-cultural context.

The participants were (N102=96 female/6 male) second year social work students. The participants were recruited in a classroom, allowing students to opt out of the study without feeling pressured. All students volunteered. The students used different mobile devises at their leisure time, and they had previous experiences of learning environments in formal education. Thought the use of new media technology and the idea of the assignment was new for all social work students. The students were divided into groups (N=25), and each group had a tablet pc, which enabled informal and formal data collection, creation, connections and collaboration.

The narrative method was used for assignment to collect needed data and participants were asked to write their media experiences from childhood till present for reflecting the perspectives of their media practices and, key changes in their media life course. In addition, the audiovisual method was used to produce a video. The students wrote their narratives in Finish, except two, who wrote their narratives in English. The individual narratives were reflected in small groups. Based on their collaboration and experiences on the life studies, the students created video as an online-presentation (Google Drive or Outlook One Drive), to other students. The video production was represented in last two courses, which was held in classroom setting. All video production was reflected

upon by the students. Finally, a self-evaluation was collected as a group collaboration from the perspective of developing media competencies.

Findings

The students (N102) written narratives comprised individual media life studies and collaborative group discussions based on their narratives. In addition, the created video production based on their discussions. An important factor was how narratives was used through personal and collaborative learning. The narratives contained similarities, differences and commonalities in the perspective of media competence, which will be introduced in this study as informative, critical and ethical competence area.

Informative competence area

In the assignment participatory culture, promote student's informative competence area, including features as navigate, circulate, create and express. Students mentioned participation in different social media networks or discussion forums, each of them participated at least in one. The students are quite randomly following the flow of media, navigating and circulating in transmedia, such as messaging in their leisure time but not as such in formal educational settings. Learning appears in the video productions. The video production as group work enabled situations, where the students were courage to make decisions, participate and believe their contribution matters. This shows as an important learning experience to all student. Thought, to access different media applications is mentioned challenging because of the lack of skills. In general, the course in the perspective of Pedagogy of Multiliteracies prepared the social work students at the same time to interpret, to produce and to evaluate different kinds of multimedia texts. (e.g. POPS2014, 20-21; Jenkins & l. 2009; Lankshear & Knobel 2011.)

Critical competence area

In the assignment the participation culture, generally enable for students quite low barriers to access, artistic expressions and civic engagement. Concepts as simulation, analyzing and reflecting is mentioned, when they reflect own

relations to media. The civic engagement in informal context is important for all of the students, though the form and activity differ between students. The collaboration of creating video productions structured student's media experiences enabling self-reflection and collaborative learning. Shared experiences enabled deeper understanding. In general, the course in the perspective of Pedagogy of Multiliteracies provided for the social work students authentic situations and needed skills, for example simulation in video production. (e.g. POPS2014, 20-21; Jenkins & l. 2009; Lankshear & Knobel 2011.)

Ethical competence area

Ethical competence area map characters such as apply, perform and negotiate, which appears in individual narrative. In the assignment, the participation, means for students to show emotions, to observe, express feelings and making choices. Life worlds are surprisingly shared and transparent in social networks. In individual narratives, the ethical dimension shows the will to understand different perspectives. The students mentioned the shared experiences in narratives and video production as important learning events. Each life world was unique and the students learned about different media users by shared experiences. Students underlined the importance of collaborations for deeper understanding. In general, the course in the perspective of Pedagogy of Multiliteracies provided for the social media students authentic situations to understand diverse cultural forms of communication to build their identity. (e.g. POPS2014, 20-21; Jenkins & l. 2009; Lankshear & Knobel 2011.)

Discussion

Present study indicate that participatory culture functioned as a kind of hidden curriculum for the social work students. The media life study as a method made visible the students learning process towards media competency development. The draft of three competence areas was capable for data analysis. The results show that sharing life worlds deepen the social work students' media competencies in informative-, critical- and ethical competence area.

The informative competence area in student's narratives were mostly related to possibility to access new media, and lack of that. Experiences and understanding of media competencies appeared mostly technical based. The collaborative video production enabled different and new media experiences; navigation in different social media applications, circulation and sharing information and performing and improvisation and adopting alternative identities. (New London Group, 2000; Jenkins & al. 2009). The shared life worlds and collaboration was mentioned therefore as important learning experiences. Overall, the growing understanding of equal access is mentioned as important information among these social work students.

The critical competence area in student's narratives were mostly related to participatory and civic engagement, and lack of that. The importance to participate, simulate, analyze and reflect different life world's shows in the collaborative video productions. In collaboration, the student's skills to analyze shared experiences, self-reflection as media users and understanding in own media relation are underlined (Frau-Meigs, 2013; Kotilainen, 2009). The civic engagement was mentioned as a low barrier to participle especially local networks. In the assignment, the students had experimental knowledge of media use, but the knowledge was not linked their own media skills. By conceptualizing their own life worlds, the students' collaboration enabled deeper media understanding in critical competence area, which was mentioned as important learning event. Overall, the understanding of shared experiences and to learn to conceptualize is an important factor in media competency development according to collaborative knowledge creation among these social work students.

The ethical competence area was also related to participatory and civic engagement, and lack of that. Both was not analyzed in student's individual narratives as such, but collaboration made individual life world visible. Such abilities as to apply, to perform and to negotiate was mentioned as important learning events. The important learning event was related to responsibility. Even the students found in their narratives similarities, there exist invisible differences. Overall in ethical competence area the growing awareness of own responsibility in media participation is mentioned as important learning event.

In summary, among the social work students the commonalities are related to informative competence area, for example understanding of media competencies were mostly technical based. Similarities and differences are found related to critical competence area; students had generally some previous experimental media knowledge, which was not linked their own media skills. The collaboration made the social work students life worlds visible and deepened the ethical competence area. Overall, the media life study as a method for learning enabled deeper shared understanding of media competencies among the students. An important educational factor was how media life study was used through personal and collaborative learning.

Future work

At this stage, I can draw some views of learning media skills and competencies among the social work students. This study indicates that the students learning media competencies seems to be related to complex situations, which benefits shared experiences enabled such as media life study –method, based on narration and collaboration. The students are ready to use different data such as images, sound, movement and words. The collaborative learning for knowledge formation is at the center in this study. The student found similarities, differences and commonalities in their life world related to media. The shared life worlds made media visible.

New ways of teaching and learning is needed in the future! New competencies that enable individual to combine different signals or media modes are needed in order to participate in digital society, which is embedded in every part of human life and social practice: in work, leisure, home, education, the community and public sphere (Kupiainen and Sintonen 2010). Therefore, the understanding related to participatory gap, transparency problem and ethical challenges (New London Group, 2000; Jenkins & al. 2009) is important for future social workers. To understand, that even though just a video was made as part of Media education skills and competencies –course, it combine intersection of informal and formal information and interpretation. The pedagogy and the methodology behind the competency development should

include then space and time to develop, and need therefore particularly specific experimental, inclusive and pedagogical strategies in the future.

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Learning trough drama in Professional Education

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Abstract

In the multifaceted and rapidly changing environment the approach to learning techniques are changing at a frenetic pace. Lecturers and students are trying to keep up with the pace. The idea to use drama as a teaching tool is not innovative. In the beginning of the XX century Piaget wrote about learning and dramatic play. He first explored the role of learning and drama in the formation of understanding of symbols, rules and social structure. Vygotsky asserted active learning as a crucial importance in the development of a language. Using drama as a tool to teach social disciplines involves communicating the ideas, emotions and feelings and thus creating awareness that may be a lack in a conventional social communication. Drama activities give a chance to the lecturers to adapt traditional pedagogic activities to new realities that are more learner-centered and thus efficient. Drama is evolving and becoming more open to different environments. This study examines impact of drama activities to Saint-Petersburg Polytechnic University students.

Keywords: professional education, drama, active learning, cognitive development

Introduction

'Because drama is a way of knowing, an exploration and a performance of understanding, it needs to be at the very heart of classroom inquiry' Madeleine Grumet expressed in the research in 1995 (Chauhan 2004, p.10).

Teaching in the changing information environment may fall short in fulfilling the goals in demand. The new educational strategy is assigned to create competences that may be used in professional life of a person. It concerns any discipline. Quite possible to imagine the situation when after several years of doing the discipline students are hardly know how to use the skills outside class. The reasons for that are different. One problem is the lack of confidence in communicating. Students are limited with the classroom environment. Inside

classrooms students meet many barriers as well. Except communication barrier that may be an obstacle to effective communication, other barriers may prevent students to be effective in creating and polishing the skills. Among them physical, perceptual, motivational, experiential, emotional, nonverbal and others. It is obvious that "real communication involves ideas, emotions, feelings, appropriateness and adaptability" (Chauhan 2004). Drama gives a context for participating and meaningful production, helping the learners to use their own resources and, thus, enhancing their practical abilities in simulation the situation. By using drama the content transformed into one with prepared learners to real life situations as they use the skills in operation. Using drama techniques also fulfills socio-affective requirements of the learners. Moreover, this learner centered approach makes the syllabus personally fulfilling. (Chauhan 2004, p.10)

In this paper, we are presenting some drama activities that are incorporated into traditional methods of teaching. The disciplines where drama was used are Intercultural communication, Career development, and Political discourse. Drama class was first used in International Relations department with the Finnish colleague and instructor Sanna-Leena Mikkonen from Saimaa University of Applied science. The discipline was Intercultural communication.

Theory and Methodology

There are many positive impacts in drama methods in educational environments. Heikkinen (2007) describes that drama is a multisensory mode of learning designed to increase awareness of self (mind, body and voice) and others (collaboration and empathy). It also improves clarity and creativity in communication of expressing verbal and nonverbal ideas, which develop listening and observation skills. Drama can also deepen understanding of human behavior, motivation, diversity, culture and history. (Heikkinen 2007)

Drama is social pedagogical and sociocultural learning method. This means that the teacher´s role is rather a facilitator than a "teacher" in a traditional way. The idea is to create the potential atmosphere for dialog and reflection with drama games and exercises. Every participant (including the teacher) is learning. Drama methods are useful for developing group-work and interpersonal skills. The exercises enable exploring the chosen subject collaboratively, which means

learning with the group and via the group. The cooperative process includes discussing, negotiating, rehearsing, performing and reflecting. The social interaction and risk taking in drama develop trust in self, others, and the process.

Ryynänen (2016) and Kurki (2011) present the dimensions of sociocultural animation; pedagogical, social, community and cultural dimension. Drama supports personal growth and understanding of the chosen subject (pedagogical dimension). Drama also strengthens group cohesion and dynamics (social and community dimensions). Drama also improves creativity, expression, empathy and critical thinking (cultural dimension). (Ryynänen 2016, 137; Kurki 2011, 39-68).

Drama can be interpreted in many ways. However, the common core that you find in any of the definition is the way to depict the life of a person through action. It means that while acting you are getting the ideas, feelings and emotions of a person in a given situation. Learning though drama is supposed to teach the students the situations while simulating them. It may give the very deep understanding and awareness of the events, emotions, feelings that a person is acting with drama. This method may be applied to teaching any discipline.

Julie Dunn and Michael Anderson in their research (Anderson and Dunn 2013) give a clear vision on the theory and methodology of using drama in different environments. The basic concepts are the ways in which drama can activate communities and learners. Drama as a method and tool may act as political, social, language agent, involving participants to act and think about voice, power, policy, identity, censorship, society, etc. One of the method for activating learners is to be aware of resistance skills for repetition and rehearsal. Drama in education provides the opportunity to rehearse the probable situation now. You are acting the situation now. Another important incentive how to activate learners is reflection after each of the session. Students reflect on the individual work, group work, some ideas and concepts they have learned with drama activities, on the feelings and emotions about the exercises. It may be a word, concept, idea, emotion that comes up to a student during the session of drama exercises. That is very important to speak them out as it will give a more clear vision for a person

how a concept, notion, word, emotion appeared to him so apparent and transparent after drama session.

Activities and Assignments

The basic ideas for drama activities on Political discourse and Career development classes were taking from 101 Drama games and activities by David Farmer (Farmer 2011). The exercises were adapted to the needs of Political discourse and Career Development curriculum.

Drama class was first used in International Relations department with the Finnish lecturer and instructor Sanna-Leena Mikkonen from Saimaa University of Applied sciences. The discipline was Intercultural communication.

Intercultural communication class

Intercultural communication class at the International Relations department is provided in the English language. The structure of the drama workshop was as follows: Warm up-games (ice-breakers), Introduction game (each participant is important); Explaining the idea of the method (participation is voluntary, no acting skills were needed. Also the task of the workshop, dialog and intercultural communication, was explained). Assignments (containing both activities and reflective discussions) either in pairs, in small-groups or the whole group together. The drama games included improvisation games (mostly without spoken words for challenging non-verbal skills) and Augusto Boal´s Image theatre exercises. These included still pictures or statues, which were interpreted by the spectators and reflected in discussions. (Routarinne 2005; Spratt etc. 2000). The last assignment was to improve the cohesion of the group and thank everyone for participation. The final step was collecting feedback.

Assignment one: Warm-up games

Invisible Hula Hoops. All together, standing on a circle. Warming up the body and mind, become present, throwing yourself – and having fun. The teacher gives example of the pretended hula-hoop spinning around on different parts of the body. The idea of warming up –games is also "braking the ice" and create a relaxed atmosphere.

Ha –circle; clapping hands together and saying "ha" aloud, one by one in turns. The ha-message goes through the circle very fast like a relay. To make it more difficult (and fun), the facilitator gives another ha-message to another direction. This is a reaction-game. The idea is concentrate on a task to succeed as a team, but the mistakes are only good thing for warming up. A mistake makes everybody laugh, and the mistake is not a big deal: laughing makes us relaxed.

Assignment two: Speed dating

Everybody walks around the class. As they hear the sign (a small bell ringing), everyone takes a pair and has a short discussion on the given subject (for example "my favorite music", "where I would like to travel" etc.) After a few walks, bell-rings and dates, the participants know a lot more about each other, and have practiced and developed their dialogue skills.

Assignment three: Ten second Objects

Ten Second Objects was created by David Farmer. This is a very popular drama game and a useful technique which can be developed easily towards improvisation or physical theatre. It is also highly accessible and a great fun. The class was divided first into pairs, and after a while into small groups (4). The instructor called out the name of an object and all the pairs and groups have to make the shape of that object out of their own bodies, joining in different ways while you count down slowly from ten to zero (or five to zero). Usually every group will find a different way of forming the object. No spoken words were allowed to use while forming the objects, so the participants had to use non-verbal communication skills. Examples could be a hamburger, a car, a fried breakfast, a clock, a washing machine, a fire.

Assignment four: Still pictures and reflection

The students were divided into several groups of four. They were given the cards with the name of the country. Each group had a different country. The task was to create and show a still picture or a statue of the country they had in their cards. Students were given several minutes to share the ideas how they can do this. The statue of a particular country were presented as the next step. The spectators were asked: "What do you see?" The idea is not to guess the "right" name of the

picture as soon as possible, but to interpret what is happening, what feelings, emotions and expressions there are in the still picture.

After watching all the still pictures, each group got an assignment to imagine and emphasize the person living in that country. What does he want, what are his basic needs? After a few minutes of discussion and writing down the notes in groups, the teacher acted as a compass needle, pointing with the finger one group at a time, and each group saying aloud one sentence when pointed at. The sentences were listened together. Reflective discussion: What differences were there between the countries? Where the basic needs different from each other? Why? Where do we get the ideas and understanding of people living different countries? Etc… At the final stage of the task the students were asked to discuss the countries they showed and comment them on cultural dimension.

The final assignment

Creating the helicopter the whole together, without spoken words, using nonverbal communication, imagination, expressive and group-work skills.

Students were positive as the workshop gave them a different academic experience that helped them to be more open. It was very helpful to develop skills of teamwork and communicating with people you do not know well. Ice breaking activities were very useful for creating positive atmosphere.

Career development class

Career development class is done voluntary for the students in the English language. It is a combination of lecturing and interactive activities of individual and group work.

Assignment one

The task was to choose the roles from a very famous Russian fable and to act as a pike, a swan and a crayfish. It is difficult to ride the cart when all the animals have their own vision how to do this. The students are supposed to show case the ideas as a pike, a crayfish and a swan going to do plan future actions in a team.

The second step was to role-play the way a pike, crayfish and a sawn would do this. The students have the time limit to prepare themselves up to the moment when the instructor gives a sign. The bell rings and the students act the results.

Assignment two

Simulation of the interview. At the first stage the students were shown the interview for the job (Gumperz 1991) and organised the discussion how would they behave, if they give a job to Mr. Sandhu or not and why. After that the students were asked to roleplay the interview how they would behave to get this job.

Political discourse class

Political discourse as a subject is a combination of politics and English language teaching.

Assignment one

An instant way to make up a story, using sentences beginning with "Fortunately" and "Unfortunately". "Despite being lucky", "Despite being unlucky". The stories are based on the photo and statements of political leaders of different years and from different countries from the course book.

Assignment two

The students are given several headlines form the newspapers on the interconnection of politics and economy such as "Indian economy booms but poverty prevails", "China trade surplus hits records" and others. Each pair has their own phrase. Pairs are to show case the answers on the questions: 1) What is the country from the headline and what is going on with the economy of the this country. Other students are to guess about the country and economic situation. In the final stage the discussion were organized based on the statements where the prospects for the countries are bleak or bright and what the connection with political situation is.

Data collection and analysis

In the end of the drama session, the students were asked to reflect and draw the face that show their feeling and emotions about drama class. As well, they were asked to write reflection letters on the tasks that they have done. In the end of the course, the students did the final test where they are supposed to answer the questions about the countries, objects and people etc. they have learned with drama.

We analysed the reflection letters and assessment forms that they have done after the classes.

At the individual level feedback that the students provide on drama activities were quite positive as many of the students say that they liked so much to be active and involved. For some of the participants drama appeared to be less positive because of not being ready to group work and communicating actively with different partners. Some of the comments were adapted or translated to make them more communicative and comprehended in English.

S1: "For me it was interesting. As it turned out I love acting".

S1: "It helps to be more sensitive".

S3: "the drama opened my mind".

S4: "the drama was a little bit difficult for me. I do not like to communicate with people and do a group work. I feel myself nervous while doing this work."

S5: "For me the class was a little bit nervous because I don't really like to communicate with people."

S6" "In the end I relaxed and felt myself more comfortable".

Some comments of the students on the group work are mainly positive. One of the pleasant moment the participants mentioned that now they "learn a lot more about their group mates" and the "ideas they have about different things." We consider it as a very positive thing as drama gives a chance not just to listen but also to hear other people.

S1: I learned some personal information about groupmates.

S2: I understand that in our group is not just a group but also a team.

S3: Drama class showed to us that we do not need words to share our opinion with our groupmates.

S4: …in group work I have learned a lot about Belgium and its politics.

S5: the class seemed to me not serious.

S6: I have learned some personal things about my groupmates.

The students were also asked about the words, concepts, ideas, and notions they have learned with drama activities and about their personal emotions about the drama method. Along with the positive ideas, critiques were given about not having clear vision about what drama techniques were and disintegration of drama activities with educational methods.

S1: "… With help of drama it happened that I could discuss politics much easier".

S2: "…we can discuss our opinion about politics in non-aggressive way…"

S3: "I have learned one new word in English and I am happy about it. And that's all. I think that I do not need drama in my future profession" .

S4: "I don't know how drama can be applied to my education and my future job".

S5: "I think I should trust people more".

S6: "with the help of drama I understand that I do drama every day".

S7: "I don't understand the difference between drama and other active learning tools".

All the reflections are very important for analysis and further development of the curriculum.

References show that some students do not consider the class effective. But in the dynamics after having taken several classes of drama the students say that they re-examine the results find drama a useful learning tool.

Discussion

Using drama in the educational environment is a very effective educational tool. To make it more positive and lucrative a lecturer should take into account a number of aspects concerning teaching with drama.

The organization of the classroom environment along with the different roles of a lecturer and students give positive results. The most obvious the fact that in drama class the role of the lecturer as well as other participants are very important as the teacher must be very well prepared and aware of all the difficulties that may be encountered while doing drama. The lecturer appears in several roles as a tutor, mentor and a participant and must well adjust and move in all the roles. It is quite useful to understand for a lecturer and students that while doing drama they are doing different roles in the non-conventional environment. The tasks where we need to describe and play some scenes as the reaction to rude and violent actions are may become difficult for both a lecturer and students. They must be well developed and prepared.

That is very important to establish trustworthy relations between a lecturer and the students. It gives a chance to the students to understand that in drama they may play different roles. The lecturer as well is playing the role of the instructor but not the role of a person who is going to evaluate and to assess.

One more important thing is that the students must be explained that the participation is voluntary and it is no need for them to enrol. If they do not want to do any of the activity, it is no necessity to be involved. The lecture may give a help to support a student in understanding the situation. There is one of the way to establish trustworthy relations between students and a lecturer. Empathy is crucially important for crating positive atmosphere.

It is crucial to explain before the class what drama method is. Some of the students probably are prone to traditional techniques of learning and not

interested in active or innovative learning methods. They may think that these methods may not prove their effectiveness for the students. The goal of a lecturer at this stage to explain to the students how drama works. The students are rather sceptical about playing in drama is that they do not have clear vision what drama methods are. They think they are going to "play Cinderella" or "Whinny the Pooh" and they think they the method probably effective for young learners but not for adults. When the students are explained that simulation and group work may be considered as the elements of drama it becomes obvious for them that drama is an active way of learning. As Amy Cuddy in her famous TED talk say "fake it till you make it". This the way learning through drama.

Another reason why the students refuse to participate is the fear of being judged not only by the lecturer but by the groupmates as well. Sometimes they need preparation that is more serious.

Conclusion

This is the magic capacity of drama, in fact its central function: through fiction, we can rearrange reality temporarily to look like whatever we want it to, then change it at will into an altered or a different fiction to fit our purpose (O'Toole et al. 2009, p.17). As we are doing elements of drama in many ways during education the scholars need to think over about clear vision how to 'currick' the methods into the curriculum. If to consider the curriculum as a way to organize interaction between students and lecturers to run along through the material then 'currick' is a verb with Latin origin 'currere' and means 'to run'. William Pinar in his method of currere of 1975 says "The method of currere reconceptualized curriculum from course objectives to complicated conversation with oneself (as a 'private' intellectual), an ongoing project of self-understanding in which one becomes mobilized for engaged pedagogical action—as a private-and-public intellectual – with others in the social reconstruction of the public sphere" (Pinar 1975). Thus if to consider curriculum as the active platform for developing skills it is quite time to think over how to run along drama together with students and lecturers.

We would say that drama classes in the framework of interactive learning environment might be very popular among students. People feel and understand

the importance of learning through active action as one of the way to get skills. We name listening, reading and writing as passive way of learning as very effective ways in getting knowledge. But to train skills we need to practice them. Drama is one of how to get skills more effective through modelling the situation and acting in it.

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Russian-German Project Experience: Vocational Training for Hospitality and Catering.

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Abstract

This paper is a pedagogical case describing the results of a joint Russian-German pilot project of vocational training for the hospitality and catering sphere. This pilot course of study was carried out at the Moscow State Institute of Tourism Industry n.a. Yu. Senkevich (MGIIT). The two focuses of analysis are ESP classroom methodology and organization, and trainees' ESP performance. The article highlights principal organizational differences between the Russian vocational course and its German prototype, challenges of Russian trainers and their solutions. Particularly, a combination of modern approaches was applied, such as CLIL, CALL and task-based learning. Special emphasis was made on creating an interactive ESP learning environment. The paper gives grounds for these modern approaches and technologies and shows how they were synchronized in the course. Samples of original tasks are given as illustrations in the Appendix. Negative and positive results of the project are evaluated.

Key words: vocational training for hospitality, content and language integrated learning, computer assisted language learning, task-based learning.

The background of the IHG project research

As it was stated by Yin, one should use a case study strategy if he or she deliberately wants to study contextual conditions. Yin defined a case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident…[and] rely on multiple sources of evidence" (Yin 1994, p. 13). The focus of this research is on an international vocational training project in hospitality and catering meant for Russian trainees. The course was launched in 2013 on the initiative of German and Russian hospitality management CEOs. There have already been one release of the IHG course graduates, and the second generation is finishing in spring 2018.

The IHG apprenticeship course is meant for undergraduate would-be bachelors of Tourism and Hospitality, who are interested in upgrading their knowledge and skills to European standards. The duration of the course is 3 years with an international intermediate exam after the 3rd term and a final exam upon the

expiry of the 6th term. The IHG hospitality and catering pilot course stands out of other similar vocational training courses in Russia for several reasons:

- It is based on authentic standards of the Intercontinental Hotel Group, including professional qualifications, procedures, service practices and legislation.
- It combines apprenticeship with study.
- This is an English-based course, that is the disciplines must be taught in English.
- Its ESP instruction is to provide language support for all the subjects and disciplines of the IHG vocational training, that is hotel organizational structure, service and cooking technologies, marketing methods and sales techniques, enterprise resources procurement, housekeeping, types of food service and table setting etc.
- It presupposes a 3-week internship and trainee-work period at catering and hospitality institutions in Germany after the 5th term.
- It includes taking an international complex professional examination and result evaluation by an international board of outside examiners.
- It is to be facilitated by periodical consultative visits to Russia and tutorials attendance by German experts and by a familiarization trip of our Russian trainers to Germany.

The course posed a real challenge because, firstly, it was unusually new to both trainers and trainees, there were few materials to use from other kindred courses. Besides, there were strict prescriptions in terms of hospitality and catering standards and procedures applied in the IHG hotel chain, which made them the content focus of our ESP course. It was highly specialized even for an ESP course and required from trainers deep knowledge in specific spheres. Apart from that, an untoward factor was the fact that duration of the course and the frequency of contact classes were rather limited (once a week, 6 terms). Consequently, the course had to be intensified and made interactive.

The above special features and unique for Russia settings predetermined the problem of this research: What should the format of the IHG vocational training course be and how can modern methodologies and instructional technologies be applied to ensure its success?

Stages of the research and methodology

The present pedagogical case is partially exploratory, partially descriptive and consisted of the following stages.

First, the exact questions to find answers to were formulated:

- How can trainees be motivated to do the classroom part of the vocational course?
- How can the ESP be synchronized with hospitality subjects study?
- How can the ESP course coach trainees for the International vocational examination in Hospitality and Catering?

Then possible propositions were made to be tested:

- Computer assisted language learning (CALL) based on trainees' needs analysis can keep them motivated throughout the course.
- Content and language integrated learning (CLIL) may enhance mastering ESP while mastering other subjects with it.
- Practically oriented tasks tailored to the authentic IHG samples need to be embedded into the course to efficiently train for the International examination.

At the next stage, the two units of analysis were chosen: classroom organization and instruction approaches, and trainees' ESP performance. After that, the case study protocol was worked out including research design, methodology used (such as pedagogical cases literature review, modern foreign language teaching methods and approaches review, IHG documents analysis, direct and participant classroom observation, trainees' oral and written performance evaluation, group and individual occasional talks with trainees etc.), data collection (gathering evidence of oral and written performance) and its analysis. Finally, the findings were evaluated.

Classroom organization and methodology solutions

1 Content and language integrated learning

ESP learning is content-based and thus relies more on language as a vehicle of instruction rather than the object of instruction (Brent, A. et al., 2012). According to David Graddol, CLIL is "…an approach to bilingual education in which both curriculum content (such as science or geography) and English are taught together. It differs from simple English-medium education in that the learner is not necessarily expected to have the English proficiency required to cope with the subject before beginning study" (Graddol 2006). CLIL was naturally resorted to as methodology of using English for mastering professional subjects in

hospitality. The trainees' initial level of English, although not even, was sufficient to use English to study hospitality themes and disciplines That is why we conducted all sessions in English, studying all themes and subjects. The immersion into English, using it as an instrument for exploring particular knowledge and negotiating it improved the students' language acquisition results. Even disadvantaged trainees, whose English was much worse than the language of others, showed noticeable progress by the 4-5th term and coped with their tasks on the job and in a training classroom. The explanation behind this was economical CLIL and a high motivation of the trainees. Besides, the work-and - study format gave them a chance to compare their on-the-job normal performance with what they learned about benchmarking professional performance, to make inferences and to correct their on-the-job behaviour shortly.

CLIL ensures that English becomes a vehicle for content and the language teacher assumes an additional role of the subject teacher, which entailed additional commitments. The idea of integration and mutual penetration of educational and professional environments in vocational higher education has already been emphasized by scholars (Крупченко 2004, Шестоперова 2004 and others). In our case shaped as interdepartmental cooperation it consisted in coordinating the themes of lecturers' sessions, mutual consulting on issues within professional scope, sharing teaching materials in English and feedback exchange from sessions. Moreover, our trainers attended workshops conducted by hotel experts alongside with trainees and thus gained invaluable knowledge and experience in the subjects taught.

2 Computer assisted language learning

In order to provide highly specialized instruction trainers needed appropriate materials. The principles guiding materials development were borrowed from B. Tomlinson (Tomlinson, 2010) including fully contextualized activities, language production to achieve intended outcomes, responding to authentic stimuli etc. Of special interest for the IHG project was a set of characteristics proposed by Butler-Pascoe and Wiburg (Butler-Pascoe & Wiburg 2003) about effective technology-enriched learning environment. The most important for an ESP

Internet-supported vocational course are the following characteristics suggested by the authors mentioned, that could be regarded as selection principles for Web resources:

• The resource utilizes authentic materials from specific disciplines and occupations.

• The resource supplies authentic audiences including outside experts in specific fields.

• The resource uses multiple modalities to support different learning styles.

• The resource provides interaction and communicative activities representative of specific professional environments.

• The resource provides comprehensible field-specific input and facilitates students' output.

The above principles rationalized the selection of e-materials for the present course. These principles are best applicable to Internet tools and resources capable of simulating professional and natural communication environment. In other words, computer assisted language learning appeared highly demanded and helpful. CALL is known as any process in which a learner uses a computer and, as a result, improves his or her language (Beatty, 2003, p. 7). One of the ways to apply this concept to work was shifting the teaching paradigm towards more autonomy of learners at the expense of the Net. We proceeded from the assumption that if plunged into their professional environment trainees could benefit from career-oriented tasks using English at out-of-class and off-work time as well.

In our IHG project computer was used as a/ a tutor for language drills or skill practice (self-check exercises), b/ a tool for researching and presenting (multimedia and textual materials and resources), c/ as a medium of global communication (social networking), d/ regular email instructing (materials with tasks), e/ studying authentic professional genre samples and creating genre samples of one's own by analogy (e.g. purchasing order, incident report, letter of apology, MICE event programme etc.), f/ simulating professional operations with the help of special interactive instruments, such as booking.com, eHow.com,

TripAdvisor, Facebook etc. for booking hotel accommodation or a restaurant event, choosing the best venue for an incentive according to a customer's requirements, planning an advertising campaign and so on.

CALL meets a modern interaction requirement, which stems from objective necessity to rapidly find one's bearings in modern business environment, find information and solve issues, join communication with partners or computer for productive interaction. In view of this objective, the out-of-classroom autonomous work of trainees was arranged in a special way including routing via professionally relevant interactive web sites for a/non-linear reading with hyperlinks and opportunity to customize the learning process to learners, as well as for b/doing professionally relevant assignments.

3 Task-based learning and students' activities

As Jane Willis considered, TBL is a way to get away from language form and develop students' ability to do things with English. Indispensable requirements for TBL are problem solving and professionally relevant meaningful purpose of a task (Willis 1996). In our case tasks had to be not only 'real-life' but produce hospitality jobs-related authentic discourse. That is why activities elaborated for this vocational course combined perceptive and productive tasks, always with an eye to professional target output. For instance, watching a video episode was either for learning procedures and algorithms or for detecting professional errors. Similarly, identifying hotel documents (rooming list, purchasing order, incident report etc.) was to be followed by enlarging upon who in a hotel uses them and what for. Examples of task-based activities elaborated for this course are given in the Appendix below.

Results evaluation

As a result of the triple combined instruction (CLIL, CALL and TBL) the performance results of the trainees were as follows.

1. The motivation was judged by attendance and the ratio of the graduates output at the final examination. Thus, the average classroom attendance during the 2nd

year was 71% (with individual 50% minimum and 90% maximum) and 82% during the 3rd year (with individual 39% min. and 97% max.). These figures show considerable and stable interest in this project, although individual extreme percentage polarize by the end of the course (50 vs 39, 90 vs 97) as a result of diverging personal interests and conditions.

2. The Russian side evaluation of trainees' achievements showed mostly good and excellent term tests marks with few exceptions; at least 1 credit arrear of two thirds of trainees for the second year of study, and more than 1 credit arrears of half the trainees in the last year. This could be explicated by growing knowledge and experience of the trainees and the hotels' higher demand on them and higher workload. One out of 12 initially registered trainees dropped out after the 2nd year (8%) to change the career trajectory, another quit in the final year as an expectant mother. Two trainees failed to get credit at the end of the 3rd year for underachievement (17%).

3. The German side evaluation, however, appeared different. The final international complex examination (written theoretical part and oral servicing part, both in English) resulted in 3 'goods', 4 'passes' and 3 failures. The main reasons for the international examiners' dissatisfaction concerned procedural inaccuracy, lack of standardized servicing approaches, failure to provide convincing explanation for one's actions and, in some cases, insufficient command of professional terminology. These results demonstrated more rigorous than Russian evaluation criteria and more focus on particular performance aspects, which must be taken into account by Russian trainers. The discrepancies can be accounted for partly by organizational differences. Comparison of our course with a similar vocational training course in Germany revealed some principal distinctions: a/ German vocational training in hospitality is supervised by the national Chamber of Commerce and Industry, whereas ours is not; b/ the German CCI experts participate in the final examination alongside with representatives of business community and even trade unions CEOs, whereas in Russia term exams were local events only and only the final examination was attended by German experts and hotel officers; c/ there is an early warning system in Germany combatting absenteeism and the names of trainees, missing classes

regularly, become known at the CCI, contrastively, there is nothing of the kind in Russia; d/ German hospitality courses at vocational schools are funded with the land's taxes, but in Russia the course was funded by the participating hotels. Thus, the German IHG course is supported at a governmental level and has a higher status than ours.

Conclusion

On the whole, this pilot course justified the expectations of its participants: 7 out of 10 graduates (70%) completed the course successfully and received an international diploma in hospitality. Such a challenging goal became feasible thanks to the synergistic effect of a combination of modern foreign language learning methods and approaches (first of all, CLIL, CALL, TBL) and close coordination with the German partners. At the same time, this project revealed some weaknesses both at classroom and organizational levels (inaccurate ESP performance assessment criteria, lack of trainees' accountability, failure to provide vocational training support at the governmental level, failure to ensure a seamless trainee-employer movement etc.). The IHG training project became a good school for trainees and their trainers, it needs further study, improvement and wider implementation.

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Appendix. IHG course activities examples

Activity 1: Labour Relations

In the personnel department, you evaluate the questionnaires of interviews. Here you notice that no question is included with respect to the union affiliation of the candidates in the questionnaires. Your trainer explains to you that this question belongs to a category of unlawful questions that need not be answered and are, therefore, not even asked. Determine which of the following questions this also applies to.

1. Questions about the reason for termination of previous employment

2. Questions about a possible existing pregnancy

3. Questions about the state of health

4. Questions about sexual orientation

5. Questions about leisure activities (hobbies).

Activity 2: Hotel Standards

You are a personal assistant of the GM in a big company. You have booked for your business partners a 4-star hotel in Moscow. You learn from them upon their arrival that

* the room service does not work at 1 a.m.

* there are 8 towels in their twin room

* there are only 2 restaurants and a lounge bar in the hotel

* the business centre does not work the clock round

* there was no space in the hotel car park on the first night.

Relying on your knowledge of hotels 'star' standards respond to these questions: Is the hotel up to its standard? Whom would you complain to and what about?

Activity 3: MICE

Activity 3: Food Nutrition Calculation

Using the online foods calories counter at
https://www.fitwatch.com/caloriecounter

calculate the calorie content of these two breakfasts, compare them and say which is more nutrient and by how many calories.

Breakfast 1. Ingredients:

  2 cups of cereal

  8 oz 2% milk

  1 banana

  1 coffee or tea

Breakfast 2. Ingredients:

  6 oz broiled white fish

  1 cup of mashed potatoes

  1 pat of butter

  1/2 cup of peas

  8 oz diet iced tea

Project education in research clusters: studies and foresights of business networks in the global context

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Abstract

Current article observes main approaches, principles and experience of project education of Master students: studying business networks by forming networks, or "proto-clusters", paying attention to changing global economy landscape. Examples of collaborative practices show that project-oriented learning in research clusters provide students with necessary competences of adequate response on current digital and industrial transformations and open-mindedness to foresee further changes in international business patterns and paradigms. Special attention in the article is paid to the future-oriented learning – Foresights techniques that should be incorporated into all student research projects, especially in the field of international economy – to absorb the "seeds" of future developments in global manufacturing and market transformations.

Keywords: research cluster, intercompany network, Foresight

1 Introduction: the "turning point" of international economics as a science and a discipline

Nobody will argue that we are observing nowadays a growing diversity and complexity of global economic system with the great number of paradoxes and dichotomies. The speed of changes is increasing, that brings additional pressure on all the participants. One of the main roots of these changes is technological breakthrough – exponential speeding up of data transmission – as a basis for speeding up production cycles that increase additional risks of the "lock-in" – inability to react on the external changes. All actors of the global economy are facing the *networking principle of international business*: economics of alliances, partnerships, cluster networks, quasi-integration effects, in general – hyper-connectivity of all actors of world economy through cyber-nets. Global and regional value-added chains (GVACs, RVACs) are expanding, forming the backbone of "Industry 4.0" (Schwab 2016) including digitalization, artificial

intelligence, data mining, FinTech, reducing significantly transaction costs – the situation that could be called "the dream of R. Coase come true", if not additional cyber-risks and expanding unmanned technologies, sharpen the future problem of structural technological unemployment. Considering all the stakeholders of global networking it is important to pay attention to national interests that bring us to the contradiction regionalism vs. globalization: complication of regional integration systems, "spaghetti bowl" of regional agreements, institutions, coalitions and alliances - facets vs. networks. This dilemma as a whole turns to the big issue of opportunities and principles of mega-regulation, economic sovereignty, determining frontiers of economic systems. Table 1 shows substantially two approaches to understanding economic systems: traditional and alternative. Although traditional hierarchical logic seems to be evident for a better governance, elements of networking approach are inevitable in the face of changes, mentioned above.

Table 1. Perceptions of economic systems

Traditional approach:	Alternative approach:
Uniqueness of economic systems	*Convergence of economic spaces*
✓ National sovereignty, economic "nationalism", ✓ Regional integration protectionism, insulation, ✓ Economic and trade wars as a tool of mutual interference, ✓ Perception logic of a hierarchical "tree".	✓ Virtualization of the economy (network matrixes), ✓ Openness, mutual penetration, ✓ From hierarchy – to heterarchy, ✓ From "tree" to the network (rhizome).

In general it is necessary to state that "Economics of change" becomes nowadays the right focus for University studies, including quantities and qualities of structural changes. Paradoxically it is even more relevant, keeping in mind low prognostic potential of global economic development: detection of "black swans" – events with low predictability potential but greater influemce on the situation in the world economy (Taleb 2015). The discourse below is devoted to the

opportunities of implementing a networking paradigm in University studies of international economy on the Master level in the light of current scientific, industrial and social innovations.

2 Concepts and approaches to university research clustering: studying networks by forming networks

Networking principle of international economy in general and international business in particular brings academic thought and teaching practice to the idea of research clustering in a wide sense, meaning not only studying the structures and behavior of nodes and links in business networks, but also form "proto-clusters" of researchers in student groups. It seems to be not so fresh idea, but current publication will show that the most effective way to study industrial innovative networks is to study them *in networks* – though it sounds rather tautologically.

To get the full synergy and awareness of such practice in the current paper it is suggested to combine several concepts:

- Revisited approach, formulated in the Report to UNESCO "Learning: The Treasure Within" of the International Commission on Education for the Twenty-first Century, chaired by Jacques Delors, former European Commission President, proposed an integrated vision for education (*Learning: The Treasure Within* 1996). It is important along with three basic pillars of education, mentioned in the Report (learning to know; learning to do; learning to be) to point out the fourth pillar of education: *learning to live together* – a need to develop an understanding of others, of their history, their traditions, and their spirituality. Such understanding "would provide a basis for the creation of a new spirit which, guided by recognition of our growing interdependence and a common analysis of the risks and challenges of the future, would induce people to implement common projects or to manage the inevitable conflicts in an intelligent and peaceful way" […] and "to escape from the dangerous cycle sustained by cynicism and complacency" (Tawil, Cougoureux 2013, p. 3). This approach is crucial for the networking studies taking into account that networks are

formed, primarily, as social networks, based on the mutual acceptance and trust.

- Collaboration networks and cluster approaches, developing nowadays as a rich branched structure of concepts, including implicit and explicit knowledge transfer, matters of proximity and structures of business networks, international clustering, network externalities, etc. (Boschma, Frenken 2010; Boschma, Fornahl 2011; Baggio, Sheresheva 2014; Smorodinskaya 2015).

- "Research hatchery" learning and teaching concept developed in Turku University of Applied Sciences (TUAS) since 2004, providing one of the networked learning environments. It is important to emphasize an interdisciplinary aspect of this approach: "Bringing together experts from different fields, interacting with co-workers from diverse backgrounds and multidisciplinary fields generate possibilities for groundbreaking work when boundaries are set aside and solutions are looked for in previously unexplored areas" (Research Hatchery as a Cradle for New Innovators. Handbook for implementation 2013, p. 14).

- Ecosystems and evolutionary economy approach, meaning that all kinds of industrial-innovative networks are constantly developing systems, is becoming fruitful nowadays, when many businesses create hybrid industries, based on cross-innovations and new types of facilitation and intermediation. Biological analogies provide researchers with fresh vocabulary for the description of companies and networks behavior (Nelson, Winter 1982; Moore 1993; Peltoniemi 2005).

3   Practice of research clustering while studying international companies' networking

Within the course "International companies' networking" of the Master program International economy at UNECON since 2011 the practice of research projects in small groups was tested and these experiences show an appropriate level of interaction and networking between students on qualified scientific search, analysis and synthesis of acquired information. See below some titles of projects fulfilled in research cluster groups:

- Studies of developing Finnish-Russian business clusters. Joint Project of Finnish and Russian Master students (in cooperation with SUAS).

- Opportunities for creation of international cluster network in the energy-efficiency solutions sector between the cities in the Baltic Sea Region.

- Analysis of preconditions for the formation of intercompany networks in chosen industrial sectors between countries of the Eurasian Economic Union.

- Specifics and perspectives of developing industrial-innovative clusters in Latin America.

- Identification and analysis of external networks of chosen global company.

- Research of current state and perspectives of development of international intercompany networks in selected global manufacturing or service sector.

The last mentioned project includes perspective, future-oriented part, based on Foresight research tools. The research methodology offered to students is exhibited in the box below.

Research methodology of current state and perspectives
of international intercompany networks in the selected global
manufacturing/service sector
(may be adjusted during the research)

Introduction: objective, tasks, sources, selected methods, limitations of research.

1. Analysis of international context for the chosen industry: fundamental and conjuncture, cyclical and non-cyclical factors. Identifiction of sector specifics, sector structure, flagship companies, influence of global and regional value chains on the structure of intercompany networks.

2. Identification of opportunities and barriers for the formation of international production networks: PESTLE-analysis, supporting institutions, business-environment, information background, endogenous and exogenous factors for networking. Opportunities for intersectoral networking.

As a result of this research the following global sectors were examined:
- ✓ Pharmaceutical industry,
- ✓ Biotechnology sector,
- ✓ Maritime transportation services,
- ✓ Aerospace industry.

It is impotant to emphasize the significance of Future Research and future thinking in general in any project fulfilled in research clusters: Foresight tools provide students with skill to synthesize all types of knowledge and implicitly present a future vision of their own future paths, which is important for their awareness of future carrers.

The *Foresight* toolkit is well-developed, for example, such instruments as determining "weak signals" and "wildcards" are appropriate in project work in student research clusters (Popper 2008, 2012; Rohrbeck, Battistella, Huizingh 2015).

4 Conclusion

Current survey shows the vital importance of project-oriented learning in the hyper-connected world, especially in the field of international economy.

It is important to formulate main principles of the project-oriented learning and teaching within research clusters:

- ✓ Interdisciplinary approach – meaning "holism" rather than determinism in case of Master students' research.
- ✓ Awareness of the global context for the particular business network – which is extremely important in the process of growing transparency and openness.
- ✓ Future orientation of any research – a "Foresight push" that should be given to students by tutor selecting an appropriate toolkit (this important issue is mentioned below).

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