Maciej Szafrański & Marek Goliński & Hannu Simi (editors)

THE ACCELERATION OF DEVELOPMENT OF TRANSVERSAL COMPETENCES

Centria
UNIVERSITY OF APPLIED SCIENCES

ACCELERATE
TRANSVERSAL COMPETENCES

Erasmus+
Changing lives. Opening minds.

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Centria University of Applied Sciences 2017

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Changing lives. Opening minds.

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The Project "The acceleration method of development of transversal competences in the students' practical training process" is implemented in partnership:

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The Federation of Education in Jokilaaksot – JEDU

Czestochowa University of Technology

The Western Chamber of Industry and Commerce

Wroclaw University of Economics

Matej Bel University Banska Bystrica

University of Maribor – Faculty of Economics and Business

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INTRODUCTION

Maciej SZAFRAŃSKI

The year 1985 saw the publication of Orson Scott Card's book entitled Ender's Game. This science fiction novel tells the story of mankind fighting with an alien civilization – a conflict which makes use of teenagers since they are, as it results from the plot of the book, more creative than grown-ups and their actions are characterized by unconventional thinking. However, the novel has a hidden agenda. The book presents an innovative training programme followed by young cadets of the army of the future. On the one hand, it centres on schooling soldiers in the development of their professional skills typical of this occupation. On the other, it is about finding a soldier characterized by a unique combination of soft skills, personal traits and mental predispositions as well as, to a lesser degree, physical aptitude typical of a soldier-leader. Trainers find a candidate to perform the functions of the army commander. It is a boy called Ender. Further training is aimed at perfecting his leadership skills, including the ability to make quick and correct decisions. Ender, along with his squad, keeps performing increasingly challenging and real game scenarios, in which he fights cosmic battles with the enemies. The last test before the real battle is to be the most difficult scenario. The army under the command of well-trained Edgar wins, though not without losses. After the game scenario is over, it turns out that... the battle was real during which the enemy's entire civilization and planet were destroyed.

What does this book have in common with the activities undertaken by the international team in the project *The acceleration method of development of transversal competences in the students' practical training process (ATC)*, which the content of the present monograph refers to?

Activities undertaken in the project are analogous in respect of the approach to teaching. The aim of the team is to develop a solution in which, thanks to making use of a variety of practical teaching methods, it will be possible to improve transversal competences such as entrepreneurship, teamwork, creativity and communicativeness. One should stress here the term "practical teaching methods" since thanks to their application in practice, trainees will be able to acquire and improve their competences in a real context or under conditions reflecting or simulating genuine situations encountered at work. Regardless of professional competences, transversal competences are commonly sought after on the job market irrespective of a country or business line, which makes them universal competences. The team members who are working on the development of the method are involved on a daily basis in management, including knowledge, competence and quality management. The team is composed of researchers representing the following institutions: Centria University of Applied Sciences (Ylivieska, Finland), Czestochowa University of Technology (Poland), Matej Bel University Banska Bystrica (Slovakia), Poznan University of Technology (Poland), The Federation of Education in Jokilaaksot – JEDU (Ylivieska, Finland), The Western Chamber of Industry and Commerce (Gorzów, Poland), University of Maribor – Faculty of Economics and Business (Slovenia), Wroclaw University of Economics (Poland).

The monograph, made available to the Reader, contains, in the first place, a selection of theoretical issues related to the question of acquiring transversal competences by students. Secondly, it presents the results of the team's work which will be used to develop the final version of the ATC method. The authors came to the conclusion that the gathered material should be published despite the fact that work on the method will continue for a few years to come. The main motivation behind publishing the present monograph was to encourage cooperation be-

tween a wide scope of specialists, scholars, entrepreneurs and students in order to improve practical teaching processes in the range of transversal competences. Their fast development is not only indispensable in the knowledge-based economy, but also, or maybe for primary reasons, they form an essential pillar of social and civilization development.

Meanwhile, higher education graduates' too low level of transversal competences is a problem in the European job market. Higher education programmes cover the improvement of such competences. Yet, in the knowledge-based economy, in a networked world full of relations developed in multinational and multicultural teams, increasingly in a virtual reality, in a world where markets are characterized by the ever-growing dynamics of change, it is becoming necessary to accelerate an increase in the level of these competences so that graduates could be well prepared for performing tasks in work not only in a professional dimension but also in a social one.

A special role in acquiring and perfecting transversal competences is played by practical education, which is often an integral element of the student education process. There are many methods of such type of education. However, they often only complement the main path of acquiring knowledge and skills while studying. It is commonly believed, also by entrepreneurs, that practical education allows to accrue transversal competences. Institutions of higher education tend to increase the number of hours devoted to practical education and also students tend to start work earlier, feeling the need of contact with practical aspects which may expedite the acquisition of transversal competences. It would be beneficial to increase the number of hours devoted to improving transversal competences as part of practical education. However, when designing formal paths of students' education, it is necessary to allow for a number of factors affecting education programmes, which may include: budgets of higher education institutions, taking care of the appropriate level of knowledge related to fundamentals and theory, changes in employers' possibilities and engagement in the process of educating students or, finally, students' personal life.

There are many practical teaching methods. The most popular ones, however, seem to include student traineeship and work placements. Taking into account the existing limitations concerning the amount of time students could spend in companies to improve their transversal competences, their accelerated development could be found in the proper selection of the already existing methods. The criteria for such a selection may include, for instance, diversity, sequence, time.

Between 2015 and 2018 the ATC method will be developed, evaluated and implemented. Information about the project and individual partial results can be found on www.atcerasmus.eu.

It needs to be added that activities undertaken in the project are the continuation of activities commenced in 2006 as part of the initiative called Technical Knowledge Accelerator®. As part of this initiative, a number of projects have been carried out, including an international one. Although many activities within the framework of the Technical Knowledge Accelerator® project concern the development of professional education, emphasis is also put on non-professional competences. More information can be found on the project's website.

The main part of the book contains 17 chapters. They can be grouped in a few thematic blocks.

The first chapter features an overview of research and project aims planned in the ATC project. At the same time, fundamental notions related to practical teaching and teaching transversal

competences are arranged. The aim of the chapter is to make it easier for the Reader to become acquainted with the content of the remaining chapters.

Chapters two through five present a synthesis of higher education systems in selected European countries. These countries are a natural selection of the partner countries involved in the project's implementation, i.e. Finland, Poland, Slovakia and Slovenia. The analysis of education systems in particular countries points to similarities and differences in students' preparation for their future professional life. They can affect the development of processes related to raising the level of students' transversal competences.

The specific character of practical teaching at the level of higher education is described in chapters six and seven. The issues connected with this type of teaching are so broad and complex that in order to elaborate on them a case study method was chosen. The Reader will find in this thematic block reference to questions such as: programme and scope of teaching subjects connected with the acquisition of transversal competences, formal and nonformal learning methods, methods of improving and developing soft competences used at the higher education level, the structure of practical teaching methods used in technical institutions of higher education based on study programmes.

The next thematic block is made up of chapters from eight to twelve. They feature issues connected with teaching students in a practical way in the same countries as for which the systems of teaching students were characterized. Among other things, they describe selected methods of teaching transversal skills used in institutions of higher education in Finland, Poland, Slovakia and Slovenia. They present examples of using practical teaching methods in the range of acquiring transversal competences by students.

Speaking of the improvement of practical teaching processes, one cannot stray from the requirements of the job market. Therefore, the ATC Partners embarked upon consultations with companies in their countries with which they maintained friendly contacts to find out which skills within the frames of key transversal competences were important to them. Entrepreneurs' opinions need to be taken into account when talking about improving the level of transversal competences in aspects such as competence management in companies or increasing the economic growth. Chapter thirteen presents the research method which was used for communication with companies and chapter fourteen contains the results of the international research. The research method developed in the partnership may be used and improved also in other countries and by other research teams. Its usefulness and universality confirm their hitherto application in four different countries. The block devoted to the relationship between teaching students and entrepreneurs' expectations contains an additional description of the related experience of Finnish entrepreneurs – chapter fifteen.

Chapter sixteen presents Finnish experience concerning the influence of intercultural factors on transversal skills acquired by students. Further work on the development of the ATC method will take into consideration the aspect of intercultural factors. One cannot prejudge at this stage that they will have a significant impact on the pace at which transversal competences are acquired by students, yet it needs to be checked. The aim of the chapter was primarily to identify and order various transversal factors. One took advantage of the fact that research into that question in Finland has been carried out for many years.

The partners' cooperation conducted so far resulted in the development of a very interesting *matrix of the dependencies of practical teaching methods and teaching transversal competences*

to students. It is the latest product of the international cooperation that has been going on for more than a year. The matrix is described in the last seventeen chapter. It features the relations of the influence of practical teaching methods on the development of the following transversal competences: entrepreneurship, creativity, communicativeness and teamwork. As many as 85 various practical teaching methods were taken into account. Also entrepreneurs' opinions resulting from the research described in the previously mentioned chapters were con-sidered. The matrix is a tool which will be useful in further work on the development of prac-tical teaching process reference models for the benefit of accelerating the development of stu-dents' transversal competences. The matrix can also be a departure point for the development of the classification of practical teaching methods since, as it can be concluded from the anal-yses, the dynamics of the development of these methods is very high, they are often similar to each other, they complement each other and develop from other more general methods. It appears to be necessary to order these methods and their selection criteria.

Further directions of research-project-implementation work to be realized by the ATC team are presented in the summary of issues described in the present monograph.

1. BASIC TERMS

Ewa WIĘCEK-JANKA, Małgorzata SPYCHAŁA, Maciej SZAFRAŃSKI, Marek GOLIŃSKI

1.1. Introduction

The role of higher education in a developing knowledge-based society should be viewed not only in a local or regional perspective, but should also be considered at national, European and global levels.

Higher education is expected to make a contribution to the implementation of objectives, e.g. objectives set out by the Lisbon strategy related to economic growth, prosperity and social coherence. Therefore, higher education keeps facing new challenges connected with the attainment of the proper level of quality and excellence in which competences acquired at institutions of higher education will stand the test of international comparisons.

Contemporary challenges which higher education faces today requires academic staff to perceive and recognize expectations that the job market has of university graduates. The most important task for today's institutions of higher education is to prepare students to:

– accept responsibility for their own development,
– take decisions concerning their professional career,
– shape creative thinking and activity,
– enhance interpersonal skills,
– develop the entrepreneurial spirit.

All of this leads to a change in the role and demands addressed at university teachers, who often become advisers in their students' development and moderators in the process of acquiring competences. Such a situation brings about changes in the teaching process, introducing new and more effective methods. As a result of that, especially in the context of developing transversal competences, it is practical teaching methods that acquire particular importance.

The aim of the chapter is to present the definitions of terms used in the research carried out at a few universities in four European countries. The chapter is the result of a review of source literature and terms used by the European Union.

1.2. Types of education

A large variety of practical terms describing education and forms of education causes problems in international cooperation. Therefore, two principal terminological sources related to formal, nonformal and informal learning were analyzed (CEDEFOP glossary, 2004; CEDEFOP glossary, 2008; Eurostat, 2006; ISCED 1997; UNESCO glossary, 1997; NRDC, 2010).

According to CEDEFOP glossary (2008), the idea of formal learning is quite broad: it comprises learning in an organized, structured context as part of activities meant to be a direct way of teaching. Nonformal learning, on the other hand, is taken into consideration when planning activities which are not directly viewed as teaching. It means that within the framework of this concept formal learning comprises not only higher education schools and programmes which enable the obtainment of main national qualifications (bachelor's diploma, etc.), but also short

forms of education and training schemes leading to the issuance of various certificates (EACEA, P9 – Eurydice Brussels).

The definition of formal learning contained in the handbook Classification of learning activities (Eurostat, 2006) is more restrictive. One can conclude from it that formal learning comprises courses which, when completed, enable graduates to obtain the most important national school or academic qualifications. The term "nonformal learning", on the other hand, refers to short-term training and educational schemes which prepare candidates to obtain a variety of certificates. One should underline, however, that apart from the main definitions quoted here, Eurostat introduces a range of criteria allowing to differentiate between formal and nonformal learning.

Another difference between the quoted sets of definitions concerns infomal learning. CEDEFOP glossary (2004; 2008) defines informal learning as learning which, in most cases, is not intended by a learner, whereas the Eurostat handbook (2006) specifies this mode to be intentional, yet less organized and less structured. As far as unintentional learning is concerned, Eurostat (2006) introduces a complementary term "incidental learning" and excludes this type of learning from being observed and statistically analyzed (EACEA, P9 – Eurydice Brussels).

The two main notional currents presented here became a foundation for discussions in expert groups, which led to the development of definitions of terms used further on in the research:

– **Formal learning** - institutional and formal education implemented according to programs that allow gaining qualifications recognized in a given legal system (www.efs.gov.pl/slownik).
– **Nonformal learning** - institutional and formal education not related with qualifications (eg. training based on the experience of companies, social organizations); planned, deliberate and systematic activities; courses and training (www.efs.gov.pl/slownik).
– **Informal learning** - intentional training (self-learning) and unintentional (occurring in everyday life, including time spent at work, except for formal and non-formal training); unorganized and non-systematic activities; all the ways in which we gain knowledge (www.efs.gov.pl/slownik).

The concept and interpretation of the discussed terms is presented in table 1.1.

	Formal learning	Nonformal learning	Informal learning
Implementation	Conducted as part of the existing system of educational institutions	Within educational institutions and outside	Outside educational institutions
Structure	Hierarchical system (long-term) complete with the obtainment of qualifications	Short-term system of courses and training schemes complete with the acquirement of competences	Learning by participation, imitation
Intention	Intentional learning	Intentional learning	Intentional and unintentional learning

Table 1.1. The adopted concept of formal, nonformal and informal learning.
Source: www.efs.gov.pl/slownik

1.3. Qualification, knowledge, skills

Qualifications are most frequently understood as a set of knowledge and skills required to pursue necessary work-related tasks. Qualifications are confirmed with specific documents (certificates, diplomas, etc.) and allow to conclude that a given person possessing them has appropriate competences (Unolt, 1997). There are two aspects of qualifications in the Polish Classification of Occupations and Specializations:

– a level plays the function of comprehensiveness and range, resulting from the complexity and scope of tasks and duties.
– a specialization is a kind of necessary knowledge or skill to use specific instruments and tools.

Qualifications can be obtained not only as part of the school system. Qualifications can be and often are obtained as part of the course-based system or through professional practice. Moreover, professional qualifications should be viewed as a dynamic system. They are subject to continual changes stemming from the transformation of the context and development of humans' individual capabilities.

For the purpose of realizing the research aims, the terms are defined in the following way:

– **Qualification** means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards (http://eurlex.europa. eu/LexUriServ).
– **Knowledge** means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study and acquired through aware of (explicit knowledge) or unconscious (tacit knowledge). In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual (http://eurlex.europa.eu/ LexUriServ).
– **Skills** means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments) (http://eurlex.europa.eu/LexUriServ).

1.4. Competences

The term *competence* is understood in various ways. From the point of view of a business, competences can be considered in relation to tasks performed at a given position. Such a division is used by Dale and Iles, who stress that they are skills used during the performance of specific activities at a given level and defined by an enterprise (Dale, & Iles, 1993, p. 23). The authors maintain that the most important components of competences are "skills" – if the performer of a task "can" perform this task, it means he/she possesses the right competences. This view is shared by Louart (1995), who sees competences as employees' professional abilities, which are made use of at the embraced position or other areas of the enterprise.

From the point of view of a student – a future employee, competences are a proof of being able to use knowledge, skills and personal, social and methodological abilities displayed at work or during learning, in professional and personal career (http://eurlex.europa.eu/LexUriServ). If competences required for a given position at work overlap those of a given candidate, then one observes an employee's total adaptation to tasks that he/she needs to perform. Work positions

require both technical and social competences, which need to be continuously improved in reaction to new technologies and fast-paced changes. As of 18 December 2006, the European Parliament and Council defined 8 key competences in the lifelong learning process necessary for personal growth at work. An employee who displays key competences becomes more innovative, productive and adaptable, augmenting at the same time his/her work motivation. Key competences are divided into basic and transversal ones. Basic competences include, among others, communication in the mother tongue, communication in foreign languages, mathematical competence, basic competences in science and technology, digital competence.

Transversal competences commonly known as generic skills or interdisciplinary competences may be used during the implementation of diverse tasks in many thematic areas.

Such competences are defined as a combination of knowledge, skills and attitudes appropriate to situations necessary to meet social aims (European Parliament and of the Council of 18 December 2006/962/WE). They offer added value in relation to employment, social cohesion (European pact for youth), which explains the significance of lifelong learning as regards adaptability to change and social inclusion. These competences were recognized as being important because of their transversal character[1]. The European Parliament lists the following transversal competences: learning to learn; social and civic competences; sense of initiative and entrepreneurship; cultural awareness and expression. Technical competences are not enough to fulfil tasks set by the job market. It is indispensable to develop transversal competences, which will help to shape relations with the environment, entrepreneurial attitude and ability to creatively solve problems.

1.5. Transversal competences specified in the research

The following four transversal competences were chosen out of those proposed by the European Parliament:

- Entrepreneurship;
- Creativity;
- Communicativeness;
- Teamwork.

Each of these competences is necessary in learning organizations. Creative solutions to problems, implementation of new ideas, effective communication and sharing knowledge in teams are the competences of the future which need to be developed today. In order to form them, one needs to understand them and be able to define precisely each of these terms.

Entrepreneurship: a set of knowledge, skills and attitudes allowing to adapt to change, identify new opportunities of development and their critical evaluation, foresee and create new innovative solutions, take rational risk as well as implement and realize ideas (Commission Green Paper of 21 January 2003 on Entrepreneurship in Europe; http://eur-lex.europa.eu/legal -content/EN/TXT/?uri=celex:52003DC0027).

Creativity: a set of knowledge, skills and attitudes connected with the practical application of creative thinking in order to come up with original and useful solutions to problems and to

[1] Transversal competences constitute part of assumptions of the work programme Education and Training 2010, the Communique issued by the Commission in 2001 concerning the realization of the European space for lifelong learning and the Council resolution of 2002. The last two documents contain specific suggestions relating to making key competences a priority for all age groups.

develop new concepts or new links with already existingideas and concept (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008D1350&qid=1445885985313&from=EN)

Communicativeness: a set of knowledge, skills and attitudes relating to reliable transfer of information and establishment and maintenance of appropriate interpersonal relations which are the foundation of effective professional activity, clear and comprehensible expression and interpretation of ideas, thoughts, feelings, facts and opinions in speaking and writing, understanding non-verbal messages, listening to and respecting other people's opinions, being able to negotiate, make public appearances and self-presentations (European Economic and Social Committee and the Committee of the Regions: "Rethinking education: investing in skills for better socio-economic outcomes", 20 November 2012; key in the process of lifelong learning, OJ 394, 30 December 2006; education and training ("ET 2020"), OJ 119, 28 May 2009).

Teamwork: a set of knowledge, skills and attitudes allowing to work in a way that is based on activity and commitment to tasks carried out by a group as well as on aspiration to achieve a mutual aim, provide work-improving solutions, adopt joint responsibility for task completion, effectively exchange knowledge and experience, receive feedback, work together on solving problems and support each other in task execution (European Economic and Social Committee and the Committee of the Regions: "Rethinking education: investing in skills for better socio-economic outcomes", 20 November 2012; key in the process of lifelong learning, OJ 394, 30 December 2006; education and training ("ET 2020"), OJ 119, 28 May 2009).

It needs to be noted that transversal competences are not only skills, but also knowledge and intrinsic motivation of each person, who may share the competences he/she possesses with others. The high level of transversal competences leads to the maintenance and development of interpersonal links, which are indispensable in professional and personal life of every person.

Each of the presented competences needs to be developed. Predispositions, that is innate abilities, facilitate the improvement of these competences. However, predispositions are not enough for a person to be competent as far communicativeness, entrepreneurship, creativity and teamwork are concerned. Knowledge and transversal competences should be perfected by making use of various teaching methods.

1.6. Teaching methods

Teaching method that specific way of working by a teacher enabling learners to acquire knowledge, develop skills and shape attitudes, involving a purposefully selected set of methods and activities (Goźlińska, 1997). The selection of a teaching method depends on many factors: a lecturer's competence, predispositions and experience; cooperation with a team of lecturers; cooperation with coaches and entrepreneurs; potential of institutions of higher education (eg. courses, equipment, costs incurred for running workshops, etc.); students' predispositions and competences; students' interests.

All students acquire knowledge and skills in different ways because of their personality, temperament or predispositions. Hence, the selection of teaching methods depends to a large degree on people who will increase the level of competences.

The most frequent method of acquiring social skills is practice and activities in specific situations during everyday social or professional experiences.

1.7. Practical teaching methods

Practical teaching methods: methods used to acquire knowledge and apply specific skills in a practical context, which allows students to assess the usefulness of content taught and skills acquired in everyday life and professional career (Goźlińska, 1997). The highest level of remembering is connected with a direct experience. Therefore, practical teaching methods should be used when improving transversal competences.

Problem-solving methods: methods which enhance the ability of critical thinking and consist in presenting to learners a problem and organizing their cognitive process by means of diverse sources of information, e.g. educational films, numerical data, periodicals. Cognitive processes encompass analyzing, explaining, evaluating, comparing and concluding. They include, among others (Rau, Ziętkiewicz, 2000): brainstorming, observation, panel discussion, problem-solving method, problem lecture, decision games, meta-plan, organization theatre, management training, business narrative, case study.

Activating methods: a group of teaching methods which intensify students' participation in lessons/classes, simultaneously limiting the role of a teacher to the role of a moderator helping to achieve learning aims and evaluate progress.

They include, among others (Rau, Ziętkiewicz, 2000): case study, staging, organization theatre, management training, business narrative de Bono's six thinking hats, etc.

Demonstrating methods: methods which enable to attain specific values through (Bereźnicki, 2001): shows, psychodramas, organization theatre, management training, business narrative, educational simulation games, etc.

Programmed methods: methods which consist in working with a particular tool, which enables learners to acquire knowledge effectively, find out about facts and form an opinion about a given issue. They can be employed using (Szlosek, 1998): a computer, a book, e-learning, mobile Apps.

Practical methods: methods which allow to develop skills of effective activity, putting theory into practice and gaining new experience in being active. They include, among others (Petty, 2010; Bereźnicki, 2001): practical classes, laboratory classes, production classes, project method, seminar, simulation, webinars, organization theatre, management training, business narrative.

Apart from the methods suggested and presented above, source literature contains others, such as: coaching, imitating socially competent models, learning through exploration, reflective learning (http://www.ksztalceniemodulowe-koweziu.pl).

The development of transversal competences consists in changing the range of students' knowledge and skills in order to perform new tasks or perform current tasks in a more creative and effective way. The higher the level of a given competence's acquisition, the greater the effectiveness in the area of activity which is related to the said competence. By improving their competences, students become more attractive on the job market.

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Zalecenia Parlamentu Europejskiego i Rady z dnia 18 grudnia 2006 r. w sprawie kompetencji kluczowych w procesie uczenia się przez całe życie (2006/962/WE).

2. THE HIGHER EDUCATION SYSTEM – FINNISH PRACTICE

Eija HUOTARI, Hubert SPIZ, Mira SUIKKANEN

2.1. Introduction

The Finnish higher education consists of two sectors: fourteen traditional universities that put emphasis on scientific research and teaching and twenty-six polytechnics offering both teaching of theory and practice to the students. The mission of universities is to provide instruction and postgraduate education based on the scientific research conduct. Polytechnics, most of them called nowadays Universities of Applied Sciences (UAS), have a more practical approach as they educate professionals in response to labour market needs. They also conduct research, development and innovation supporting instruction and stimulating regional development. Polytechnic degrees are equivalent to lower university degrees.

Education in Finland is shaped by the Ministry of Education and Culture, while the Finnish Board of Education is responsible for implementing the targets set by the Ministry. The level of independence is high in both adjusting the own curriculum according to the core set by the Ministry, as well as implementing the aims and instructions from the Board.

Because of the shortage of resources during the last decades there have been changes. Universities and polytechnics have been forced to develop larger units through mergers, in order to get costs lower.

2.2.1. The Structure of Higher Education in Finland

The Finnish Government Decree on University Degrees (794/2004) defines the goals, extent and overall construction of degrees in universities. However, the universities decide independently on the specific substances and structure of the degrees they grant. Moreover, they make decisions independently on their syllabi and forms of education. (Finnish National Board of Education 2016).

The Finnish Government Decree on Polytechnics (352/2003 including amendments) defines the goals, extent and overall construction of polytechnic degrees. The Ministry of Education authorizes the degree programmes and the polytechnics make independent decisions on the scope and the details of construction within the framework of these guidelines. Furthermore, the polytechnics compose their curricula and forms of teaching (Finnish National Board of Education 2016).

As a result, the universities and polytechnics are left with broad autonomy, that is, the processes at both kinds of institutions can be decided upon freely to support education and research. They should have independence to organise student admissions and their own administration, but during the last few years there have been signs that the Ministry of Education and Culture is taking part in the decisions as well.

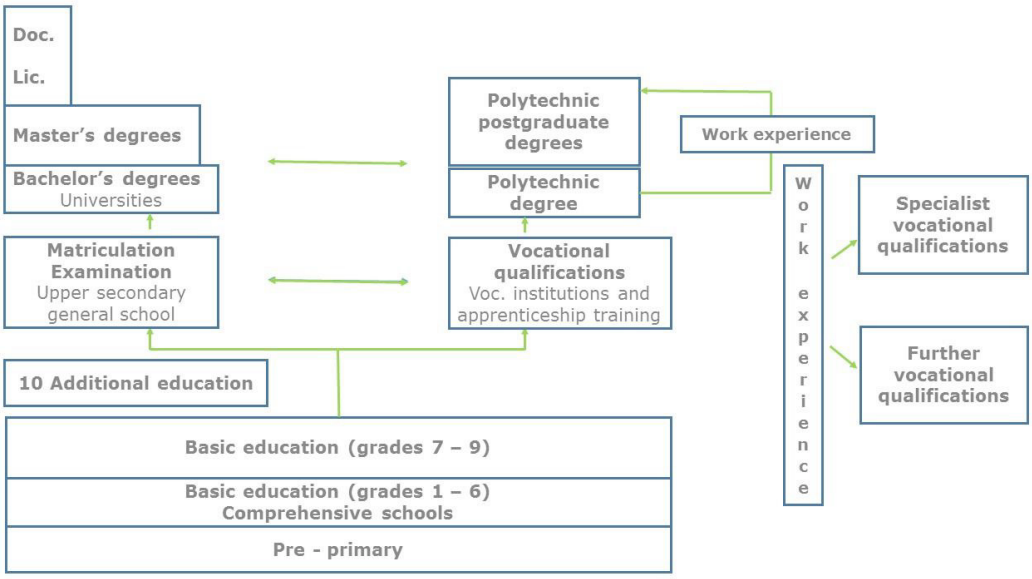

Figure 2.1. The education system of Finland (The Ministry of Education and Culture 2016).

The structure of the Finnish education system can be seen on Figure 2.1. It is compulsory to take part in the pre-primary and the basic education. This latter is also often referred to as comprehensive school, and it includes grades one to nine, until the age of 16. After that the education is divided to vocational institutions and upper secondary schools, which are concluded by the matriculation examinations. There are many possibilities to study further with vocational qualifications and there are also possibilities to eventually obtain even a master´s degree. After the matriculation examination, most students continue to study at universities or polytechnics. All education in Finland is free of charge for Finnish people, but students might have to move to university towns or cities with polytechnics, and they have to pay for apartments and cover the cost of living. Kela (*Kansaneläkelaitos*; the government institution in charge of social security) can grant financial aid for students including study grants, housing supplements and also subsidised meals at schools. The student loans are backed by the government.

According to statistics on education there were altogether 163,800 students in the year 2014 studying at universities. This figure is two percent lower than in the previous year, but the proportion of those studying in a university degree programme was three percent higher compared to 2013. As it can be seen from Figure 2.2, the number of bachelor's degree students significantly increased in 2007, due to the conclusion of permanent polytechnics.

By 2014, the total number of people in Finland holding a tertiary level degree has reached 1,359,840, distributed as follows: the lowest level tertiary degrees accounted for about 34 percent, bachelor degrees for another 34 percent, master degrees for about 29 percent and the highest level degrees for about 3 percent of all the tertiary level degrees. Women held about 57 percent of all degrees (Statistics Finland 2016).

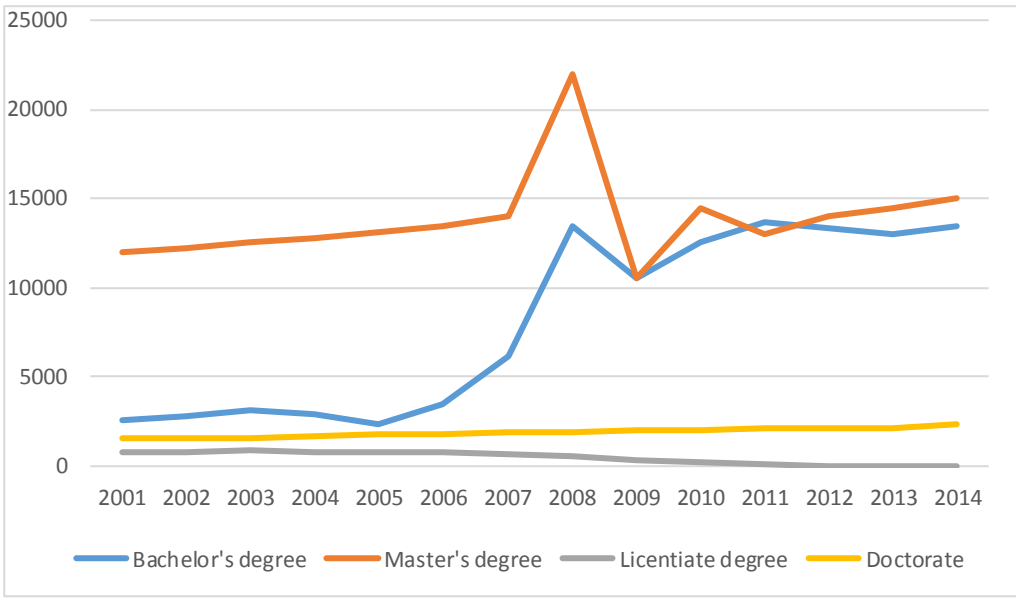

Figure 2.2. The number of degrees in Finland 2001-2014 (Statistics Finland 2016).

There were about 25,000 students graduating with polytechnic degrees, of which 2,115 were master´s and the rest were bachelor´s degrees. At the same time approximately 31,000 university degrees were awarded, of which 13,640 were bachelor´s and 14,920 master´s degrees, whereas the rest were higher degrees. The proportion of degrees attained by females was 62 percent in polytechnics and 59 percent in universities. The number of students in universities was 163,759 and 138,682 in polytechnics (Statistics Finland 2016).

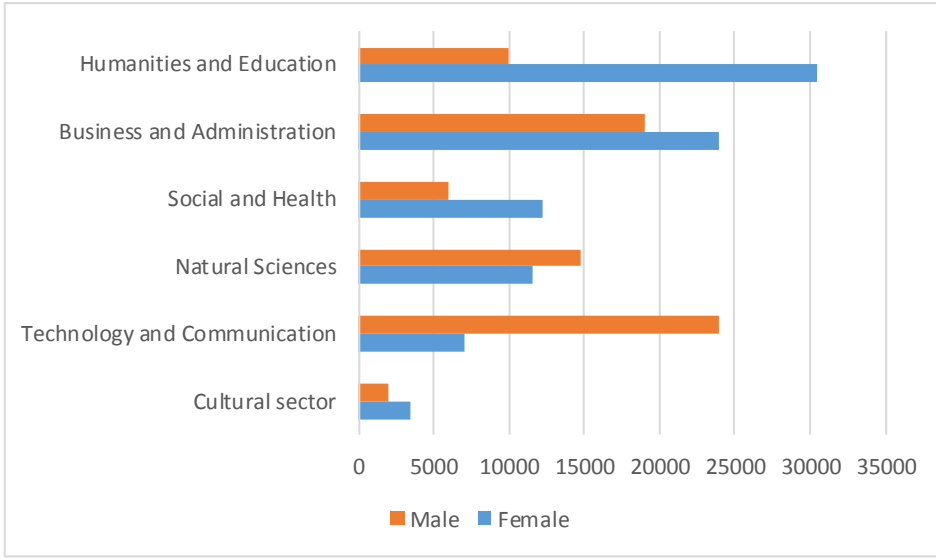

Figure 2.3. University students according to faculty and sex (Statistics Finland 2016).

In 2014 the most students, with 26 percent were studying business administration. In the field of humanities and education there were almost as many, 25 percent. The third most popular sector was technology and communication, with 19 percent of the students. The highest share of female students was in the field of humanities and education with 75 percent, followed by the field of social- and healthcare with 67 percent. In the field of engineering and communication, however, the percentage of females participating in a degree programme was only 22 percent (Statistics Finland 2016).

The most students in Finland were studying at the University of Helsinki, 34,800 students, followed by the Aalto University 18,300 students and the University of Turku, 16,800 students. Most degree programmes were carried out in the field of humanities and teaching and in the field of business administration, both 28 percent, followed by the technology and communications sector with 18 percent (Figure 2.3). Most doctorates were awarded in sciences, 23 percent (Statistics Finland 2016).

The duration of studies depends on the progress of a student in obtaining the credits complying with the European Credit Transfer and Accumulation System (ECTS). Each study course is quantified in accordance with the necessary workload, including both classroom teaching and independent work. One study year is equivalent to 1600 hours of student work and is defined as 60 credits on the average (Finnish National Board of Education 2016).

At universities, the extent of the bachelor's level degree is 180 ECTS credits, which takes approximately three years to complete. The master´s degree comprises of additional 120 ECTS credits, or two years of full-time studies. In the case of certain degrees, for instance medicine, the education is more complex and takes more time to complete (Studyinfo 2016). Due to the students' personal decisions and life situations the typical time of completing a master´s degree in Finland is six years, not five years as it was originally intended. The policy-makers have already introduced several measures in order to shorten graduation times and increase the completion of studies. Some of these include personal study plans and financial incentives (Ministry of Education and Culture 2016). According to a recent research, only 20 percent of university students in Finland get the master´s degree in five years. The maximum period of time under the law to obtain a master's degree is seven years, but less than 50 % of students graduate within this time limit (Salomaa 2016). Against the government's intentions, it seems that the length of university studies have not become shorter.

To graduate with a bachelor's degree from a polytechnic, it is required to complete either 210 or 240 ECTS credits depending on the field. This equals 3.5 or 4 years of full-time studies. It is possible to continue education in order to obtain a master´s degree from a polytechnic. However, it is necessary to acquire at least three years of relevant work experience before continuing with the studies. The polytechnic master's degree programmes are designed to take 1.5 – 2 years. At polytechnics, the studies consist of core and professional studies, elective studies and a final thesis project. All degree studies include practical on-the-job training in the form of a practical placement (Ministry of Education and Culture 2016.)

Upon graduation all graduates receive a diploma complemented with a final transcript of studies. Starting from the year 2005 a Diploma Supplement describing the qualification in English has also been issued to the graduates at all higher education institutions (Finnish National Board of Education 2016.)

Finnish universities are either self-governing establishments liable to public law or foundations liable to private law. Each university, together with the Ministry of Education and Culture decides upon the operative and qualitative objectives for the university and defines the necessary resources every three years. The arrangements also specify how these objectives are monitored and assessed. Universities receive funding from the state but are also expected to raise external funding from the business life. The total university funding includes allowances assigned to universities in the state budget and supplementary funding (e.g. paid services, donations, sponsoring). The direct government funding covers approximately 64% of university budgets. The core funding is divided among the universities based on a formula, which includes both strategic funding as well as the financing of education and research. Competitive research funding is a vital foundation of supplementary financing and plays an especially important role in improving schooling quality and affects the learning environment. Basic research at universities is sponsored and assessed by the Academy of Finland, which is an agency within the Ministry (Ministry of Education and Culture 2016).

In the funding of polytechnics, the Government assigns the resources as core funding based on unit costs per graduated student, project funding and performance-based funding. Since 2013 the universities and polytechnics have got part of the funding, 12 percent from the Ministry of Education and Culture depending on the number of students getting at least 55 credit points during the academic year and additionally 3 percent based on the feedback of the students. This is the reason why some universities campaigned in order to motivate students to get enough credit points and graduate (Koivuniemi 2016). Criteria will change somewhat during 2017.

2.2.2 Adjustment of the system of higher education to the needs of the development of the country

Finnish higher education has been adjusted in accordance with the needs to develop the country, and at the same time, the difficult economic situation since 2010 has been causing a shortage of resources. Since practical training is included in nearly all degree programmes at polytechnics, more trainees are available for the labour market. At universities, however, practical placements or internships might even be voluntary. The need to teach transversal skills in the higher education is not yet obvious, so it is important to adapt special measures.

The Ministry of Education and Culture has formed the Top Development project 3 for adjusting the system of higher education to the needs of the development of Finland towards longer working lives and flexible learning paths; for expediting young people's graduation; in order to improve the recognition of prior learning and transition from one university or polytechnic to another. The goal of the project is to better teaching qualifications to offer flexible possibilities to educate. It is also important to have a study path, which offers an easier way for students to graduate and to co-ordinate studies and work. One aim of the Ministry of Education and Culture is to allow students at universities and polytechnics to enter the labour market as soon as possible. These aims should be implemented for the period 2017-2020, if an agreement between the parties is reached during the negotiations in 2016. This goal is further supported by restructuring the funding of higher education. (The Finnish Government 2016.)

Another measure being implemented aims to accelerate the transition from secondary education to higher education by enabling the completion of academic courses and language studies already during secondary education. It is also important to strengthen links with working life and to further develop student counselling. (The Finnish Government 2016.)

In order to streamline the studies, other goals of the Top Development project 3 include developing digital learning environments for higher education, e-learning offerings and digital co-operation. Thus, higher education institutions must allow students flexible academic studies over the borders. Moreover, there is also a need to improve secondary school students' access to the higher education, so that there is no gap year between studies. (The Finnish Government 2016.)

It is typical of the Finnish Higher Education that the summer holiday is rather long, lasting from May to September. To shorten the study time for a masters' degree from 6 years to 5, the Ministry of Education and Culture suggests that a summer curriculum be arranged by universities and polytechnics to widen the selection of summer courses offered, at the same time diversifying them while also organising intensive and online courses. The Ministry's project also intends to improve the identification and recognition of the acquired work skills through 'studification' and accreditation.

2.2.3 Finnish solutions as an example of good practices – needs of the labour market

One important ongoing development in Finland is the change in the age structure of the population and work force, meaning that the amount of pensioners is increasing while the number of active workers is decreasing. At that moment the annual exit from the labour market exceeds the entry. Graduates enter the labour market five to eight years after the decisions on education have been made. The development plan for education and research, that influences the quality, quantity and the structure of education, requires estimates of training needs and the needs of the labour market. Education and learning opportunities are focused on the sectors of labour which will be needed in the future. It would be also very important to get students to start work earlier, so it is vital to shorten the time spent studying.

Practical training is one of the answers for the demands of the labour market. For polytechnic studies these placements are part of the curricula of the faculties and are obligatory. Universities have also developed practical training programmes and, depending on the faculty, these are either voluntary or obligatory. Students can include either expertise-developing or expertise-enhancing practical trainings in the bachelor's degree. The training can take place in Finland (domestic practical training) or abroad (international practical training). Through expertise-developing practical training the student will become familiar with the work environment and conditions in his/her own field (Aalto-yliopisto 2015, Oulu University 2016). These programmes are considered so important for getting a job after graduation that some universities even pay the students' salaries to the companies that hire them.

2.2.3.1 Recognition of Prior Learning

To shorten the learning time of the students it is necessary to use different methods. For example, they can have their earlier studies and practical experiences recognised by methods such as the recognition of prior learning (RPL), thus eliminating reduplication. Universities and polytechnics refer to this set of practices, whereby previously acquired skills and competencies can be identified, assessed and acknowledged. This means that a student has skills or knowledge which she/he has acquired through formal learning, informal learning or non-formal learning. The recognition of prior learning can take place through credit transfer or be based on different kinds of evidences. It can happen in two ways, by substitution or by inclusion. The student might have previous studies with a similar content, so it is natural that it can be substituted for the current studies. Students may also receive partial or complete courses based on previous

learning, if they can demonstrate that this learning fulfils the requirements of the course or study module in question. This can be done by self-evaluation, documents, demonstration of skills or some other way (Oulu University 2016).

The goal of RPL is to advance the student's studies so that the student can take an individual study path. RPL is based on the world of work and the skills-oriented curriculum. When needed, the student can show her/his theoretical knowledge and practical skills through reports, interviews, essays, learning diaries, portfolios and albums. Recognition of prior learning is part of a student's study planning, which is supervised by a teacher tutor, a study counsellor or some other advisor (Oulu University 2016).

For the students the benefits of RPL are numerous. RPL shortens the time to graduate, it gives a better understanding of real life competences and it can shorten a study period.

2.2.3.2 Studification of work at polytechnics

Because of the difficult economic situation many students in Finland have to work during their studies and it often happens that there are not enough courses offered during the annual terms. Often students must terminate their studies and they never graduate.

There have been attempts to develop new ways of earning study credits from part-time work during the studies at higher education. The name of one such project is Verkkovirta, and it aims to develop new models for earning credit points from daily work during the studies. Many polytechnics take part in the project coordinated by the Haaga-Helia University of Applied Sciences, including the following Universities of Applied Sciences: Jyväskylä, Oulu, Kymenlaakso, Lahti, Centria, Häme, Lapland, Seinäjoki, Tampere, Saimaa, Laurea and Turku (Verkkovirta 2016).

The goal of the project is to have work experience accepted as part of the higher education studies through a process called studification, thus promoting a flexible process of studying and at the same time creating a new kind of work integration model of studying during the practical training. This results in an alternative way of studying at polytechnics, since learning takes place at the workplaces instead of the classrooms. Studification of work can be thought of as informal learning through work or internship and it affects the following aspects positively: professional development, progress of studies and graduation times (Verkkovirta 2016).

Students working during their studies can make the courses at work or through projects at work. The aim is to help the students transform the learning outcomes into concrete working tasks, corresponding with the job positions and tasks of the student during the practice. The student keeps a diary about the work she/he has done and clarifies to the polytechnic the kinds of tasks she/he has had as an employee. Students evaluate their own proficiency themselves and write a report, offering some examples of their abilities. Peer reviews can also be used and also the managers can evaluate the students' work. Studification may also concern larger study programs (Aaltonen & & De Arruda Camara, A.2016). One further goal of the Verkkovirta project is to become actively involved with business life and companies, as this will positively impact the students' professional development and length of graduation by studifying the acquired experience and, at the same time, improving the chances of graduates getting a job (Verkkovirta 2016).

2.2.3.3 Junior Achievement Start Up – student entrepreneurs

According to a survey carried out among university students, every fifth of them intends to become an entrepreneur after graduating. At the same time 65 percent considered becoming an entrepreneur quite unlikely. In reality, about five percent of the students graduating from higher education have become entrepreneurs. It would be important that starting an own company in the future becomes a more inviting alternative for graduates.

Junior Achievement Start Up is a programme that develops entrepreneurial skills and is targeted at students of higher education. The organiser, JA Finland receives most of its funding from foundations and companies and also from the European Social Fund through the Finnish National Board of Education. During this one-year programme participants come up with a business, research and create a business plan, learn to take responsibility and understand how businesses work in real life. The programme also involves students, in teams or alone starting up a company of their own and turning it into a profitable business during the school year. Students running their own company improves entrepreneurial attitude and promotes an active lifestyle by increasing their knowledge of entrepreneurship, enhancing readiness for working life and financial management skills. They gain an insight into self-employment, business creation and also risk taking (Katajarinne 2016).

In the academic year 2015-2016 there were 250 higher education students from five universities and ten polytechnics in Finland involved in the programme. In the academic year 2016-2017 there will be seven universities and 15 polytechnics and almost 500 students participating. On the European level there are over 14,000 university students from three hundred schools involved. This programme has provided participants an opportunity to experience managing a small business as a whole. In the last 12 years more than 115,000 students across Europe have participated in the Start Up –program (Nuori yrittäjyys 2016).

2.3. Conlusion

The higher education system in Finland has changed a lot during the last decade. There have been demands for universities and polytechnics to do profiling and cut the costs. Universities in Helsinki have been merged, forming Aalto University. Also two universities from the Eastern part of Finland have been merged, forming a new institution called the University of Eastern Finland. The number of polytechnics has decreased from 35 to 26.

The Ministry of Education and Culture aims to make students at both universities and polytechnics graduate faster, so that students would enter the labour market earlier. They also require more online study possibilities to be offered for students, to have a wider co-operation between universities and polytechnics and to have more summer courses available. In order to improve the acquisition of transversal skills, polytechnics have included practical training in their curricula. In addition, universities have also introduced ways to recognise, assess and acknowledge prior learning as part of the studies. Polytechnics are trying to increase the amount of studification of work and to improve entrepreneurial attitudes following the principle of learning-by-doing as introduced by the JA Start Up programme, thus increasing the number of students who start their own company after graduation.

Hopefully the Finnish solutions and practices can serve as a good example for others trying to strengthen the co-operation with the local labour market at the same time providing a swift transition from tertiary education to working life.

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3. THE HIGHER EDUCATION SYSTEM – POLISH PRACTICE

Ewa WIĘCEK – JANKA

3.1. Introduction

The function and organization of the education system in Poland is governed by th Act of 7 September 1991 (Journal of Laws 1991, No. 95, item 425), amended 8 years later (1999). Over the past 25 years the Polish education system has undergone numerous changes and reforms- Figure 3.1 shows education system after the reform of 1999.

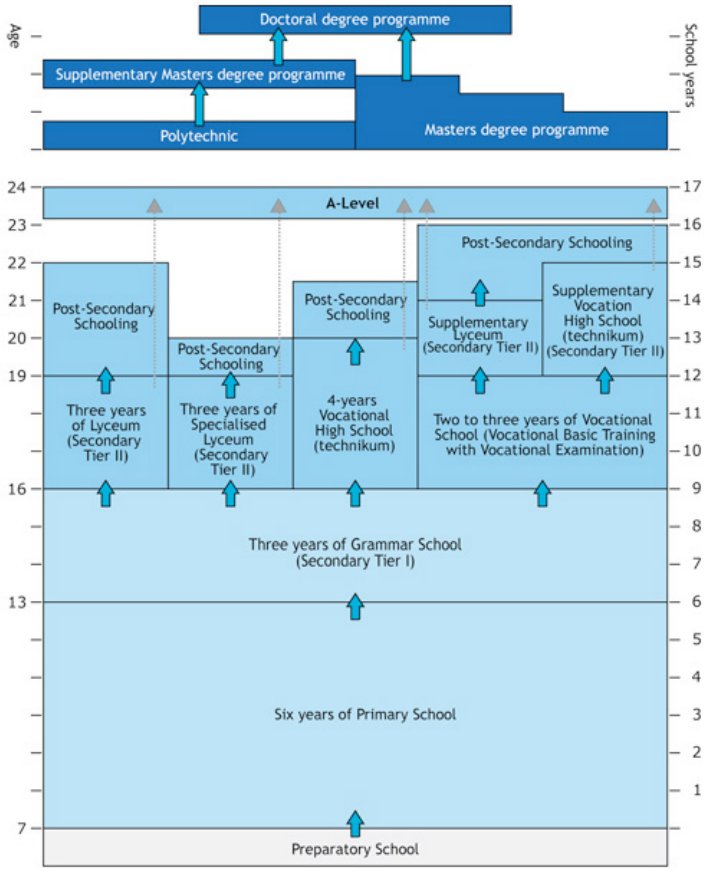

Figure 3.1. Model of the Polish education system after the reform of 1999. Source: http://www.ioeb.de/en/bildungssystem-0, 2012 [11.09.2016].

Changes introduced in 1999 did not, however, concern higher education. Changes in the higher education system were introduced on the basis of the Bologna Declaration and authorised by the Act of 27 July 2005 (Journal of Laws 2005, No. 164, item 1365). The education system in Poland comprises pre-school institutions as well as primary, lower-secondary, upper-secondary and post-secondary non-tertiary schools. In the light of the existing law, institutions of higher education form a separate higher education system (Euridice Raport 2014).

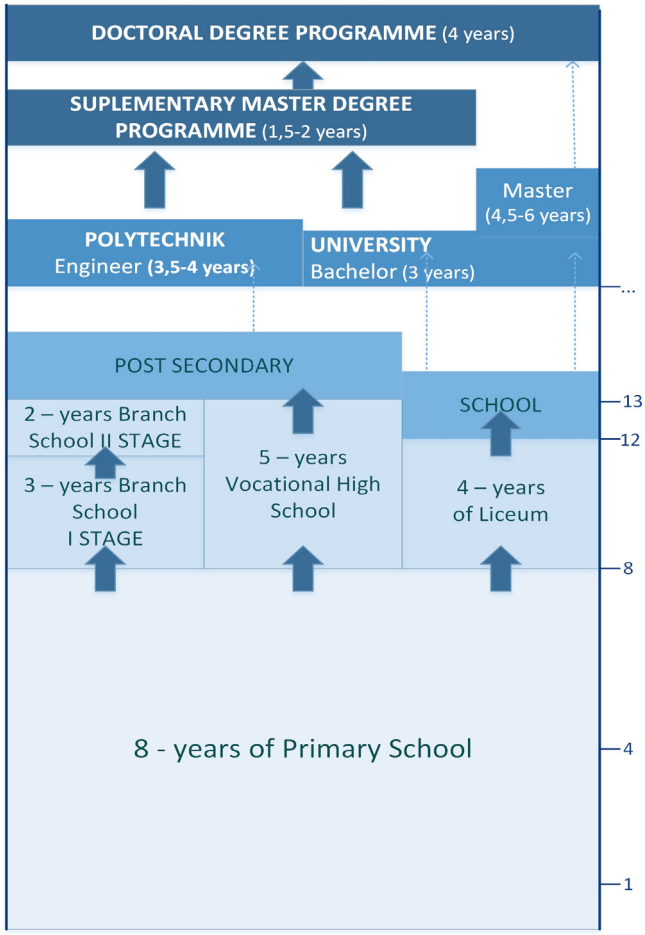

Figure 3.2. Visualisation of proposed changes in education in Poland (as of September 2016). Own elaboration.

In 2016 the government of the Republic of Poland bagan work on changing the education system. In September 2016 new solutions which are similar to those prior to 1999 were proposed. The government plans, beginning in 2017, the introduction of 8-year primary schools and education at secondary level following three paths: 4-year high schools of general education (lyceum), 5-year technical high schools, trade schools – stage I lasting three years (1 vocational qualification), stage II lasting 2 years (2/3 vocational qualification). Having completed full courses, students will be able to sit for high school leaving exams (matura), which will make it possible for them to continue learning at tertiary level. The system is to be introduced in 2017 and, after a few years of transition, in 2022 will cover all school-age students. The visualisation of the proposed changes in Poland is shown in figure 3.2.

3.2. The structure of education in Poland between 2000-2016

Under the Constitution of the Republic of Poland every Polish citizen has the right to education. Education is free of charge in state schools. Only primary and junior high schools are compulsory. Parents or legal guardians who do not send their child to school are subject to be fined.

Such a penalty is also imposed in the event of a child not fulfilling the duty to attend school until the age of 18 (Art. 70, section 1 of the Constitution of the Republic of Poland of 2 April 1997; Journal of Laws 1997, No. 78, item 483 as amended).

The Polish education system includes several educational levels and institutions:

1. **Kindergartens** – available for children at the age 3-6; Only the so-called "reception" class for children at the age of six is compulsory

2. **Schools**:
a. **Primary schools** – last 6 years and are divided into two three-year stages; I-III is early education where tuition is not split into separate subjects. All classes are run primarily by a particular group master. Pupils from years IV-VI learn separate subjects taught by particular teachers. At the end of primary school, the Central Examination Commission adminsters a test which verifies pupils' knowledge and skills. The exam result, however, has no impact on whether pupils complete primary school and whether they are accepted by a particular junior high school.

b. **Junior high schools** – the reform of 1999 brought about changes in the education system in Poland and introduced a new type of school called junior high school for pupils at the age of 13-16. Junior high schools provide comprehensive education. At the end of junior high school there is an exam which consists of 3 parts: humanities, linguistics and science. The exam result is taken into consideration when applying to high school.

c. **High schools** – having completed junior high school, pupils who wish to go on learning can choose between:
- Basic vocational schools – education lasts from 2 to 3 years and ends with taking a vocational exam and obtaining a diploma, which is the confirmation of acquired vocational qualifications.
- General or specialized high schools – education lasts no more than three years. At the end of school pupils can sit for a high school leaving exam and obtain a certificate of high school education.
- Technical high schools – last 4-5 years and offer an opportunity to take a high school leaving exam and obtain a diploma confirming acquired vocational qualifications.
- Complementary high schools lasting two years or complementary technical high schools lasting three years – make it possible for pupils to sit for high school leaving exams.
- Post-high schools – take no longer than 2.5 years and end with an exam.
- Special schools – for pupils with various disabilities. They confirm a given pupil is ready to start work.
- Higher schools – will be discussed in the next point. **The higher education system** in Poland consists of three educational stages: first-cycle studies, second-cycle studies, third-cycle studies (Keeling, 2006).

3.3. Characteristics of higher education market in Poland

The high attractiveness of European education has so far been based on linking together two fundamental missions: teaching and doing research (Kwiek, 2010). Such an approach to the operation of universities has been very strong in Europe, but not in other parts of the world, particularly in developing countries, which, over the past few decades, have significantly improved their education systems focused on teaching. As for these countries, research is almost exclusively conducted in a few selected elite institutions, mainly located in capital cities (Strehl,

Reisinger & Kalatschan, 2006.) One should also note that 80% of all worldwide research is carried out in OECD countries (2003; 2006). Outside OECD countries, 55% of research is done by China so the rest of the world, excluding OECD countries and China, carries out less than 10% of all scientific research, cf. (OECD 2006).

Polish educational policy lacks so-understood division, though higher education development strategies are increasingly taking into account a diverse attitude to universities' primary tasks. In practice, we can already observe the process of concentrating funds earmarked for research (Kwiek, 2010).

According to analysts, competition in higher education will have increased radically in a few dimensions by 2020. The economy, along with the job market opportunities for university graduates, has been more and more based on competition. As a result of that, academic institutions most probably will have to intensify their focus on their own and their graduates' competitive edge as a key element of their mission. Universities, particularly those active nation-wide, will be assessed by the public and listed in national rankings showing how their graduates fare on the job market. Apart from that, they will also be listed in exisiting global and European rankings showing the results of their research work. Strong higher education will depend on competition (Huisman, & van der Wende 2004; OECD/IMHE-HEFCE 2004; Komisja Europejska// EACEA/Eurydice 2008; Kwiek 2010).

The functioning of the higher education system is governed by the Higher Education Act of 27 July 2005. **The higher education system** in Poland consists of three educational stages (Journal of Law, Dz.U. z 2012 poz. 572; European Commission//EACEA/Eurydice, 2008; Huisman, & van der Wende 2004):

– first-cycle studies (engineering and Bachelor's studies),
– second-cycle studies (complementary Master's studies),
- third-cycle studies (doctoral studies).

Education at a particular level is provided to students who have completed studies at the lower level.

– first-cycle studies – prospective candidates are expected to have passed high-school leaving exams (possess maturity certificate); first-cycle studies usually last 3, 3.5 or 4 years; on completing the studies, undergraduates obtain the professional title of Bachelor, Engineer or a title relevant to a specified educational profile which is confirmed with a diploma; undergraduates can take up second-cycle studies;
– second-cycle studies – usually last 1.5 or 2 years; on completing the studies, graduates obtain the title of Master or a title relevant to a specified educational profile; graduates can take up doctoral studies (third-cycle studies);
– long-time Master's studies – last between 4.5 and 6 years; graduates obtain the title of Master or an equivalent degree depending on the profile; long-time Master's studies are a combination of first- and second-cycle studies;
– third-cycle studies – usually last 3 or 4 years; on completion, students obtain the academic degree of Doctor in a given field; prospective candidates have to possess the professional title of Master or equivalent.

3.4. Public and non-public education

The rise in popularity of studying has caused an increase over the past 25 years in the number of institutions of higher education. Along with an increased interest in studying for a higher education degree among high school leavers, there was also a rise in the number of public and non-public institutions of higher education. The structure of the number of students between 1991 and 2014 is shown in figure 3.3.

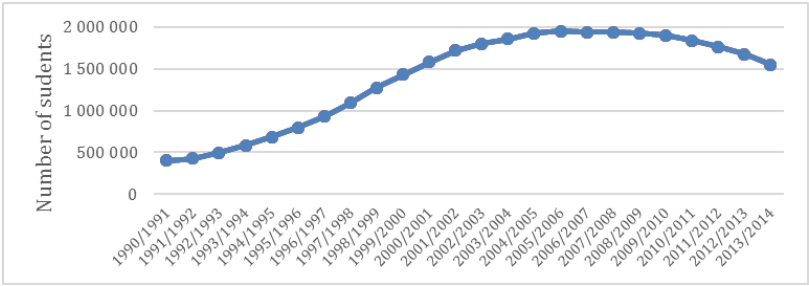

Figure 3.3. Number of students in Poland between 1990 and 2014. Source: data provided by the Central Statistical Office of Poland http://stat.gov.pl.

Increased interest in continuing education at the higher level is connected with changes in the higher education system and the adoption of the Bologna Declaration on 19 June 1999 (the changes are illustrated in the education system outline). The document contains tasks which aim at bringing higher education systems in Europe closer to each other. The main objective of the Bologna Declaration was to create the European Higher Education Area until 2010. The market's response to the change of rules was a marked rise in the number of students, which is illustrated in figure 3.4 and 3.5.

Demand for educational services in Poland progressed dynamically which translated into a regular development of both public schools, through the introduction of new fields to study and increasing the number of students, and non-public schools, which gained ever-growing popularity in the education market. The greatest development of higher education in Poland (as regards the number of students) took place between 2004 and 2006 for public institutions of higher education and between 2008 and 2009 for non-public institutions of higher education.

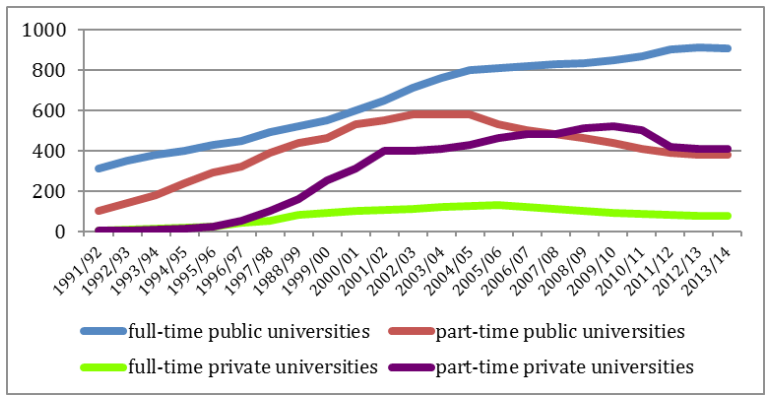

Figure 3.4. Number of students in Poland between 1991 and 2014 covering full-time and part-time studies [expressed in thousands]. Source: data provided by the Central Statistical Office of Poland http://stat.gov.pl.

The period between 2013 and 2015 recorded a decrease in the number of applicants to both public and non-public institutions of higher education.

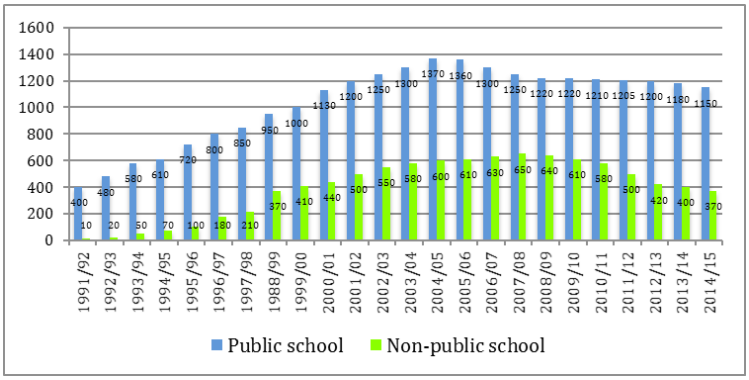

Figure 3.5. Number of students in Poland between 1991 and 2015 public and non-public institutions of higher education. Source: data provided by the Central Statistical Office of Poland http://stat.gov.pl.

Such a phenomenon was caused by demographic changes which resulted in a lower number of candidates. In turn, people born during the baby boom are currently completing their university education. This situation is presented in the summaries below. The dynamics in the change of the number of students in public and non-public institutions of higher education are shown in figures 3.4 and 3.5.

The intensive development of higher education brought about changes in the approach towards prospective students. The supply approach changed into the demand approach. Institutions of higher education began to adjust their education offer to the job market requirements.

Currently, the market position of an institution of higher education is tied not only with the number of students but also with the level of research projects, internationalization, implementations, etc. The number of institutions of higher education offering particular educational profiles is shown in figure 3.6.

State Higher Vocational Schools (PWSZ) enjoys significant popularity in Poland. Such a distribution of results points to an essential aspect of two factors, which are taken into account when choosing an institution of higher education. First, State Higher Vocational Schools enable to acquire vocational skills in first-cycle studies and most often cater for local and regional educational needs. Second, they run courses which make it possible to qualify in specific professions (figure 3.7).

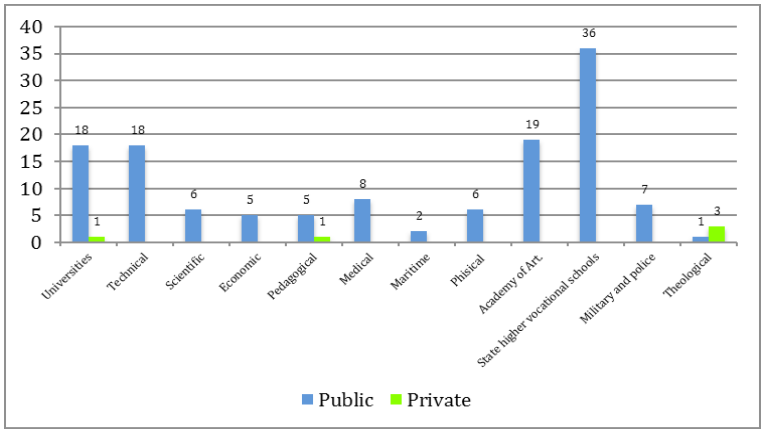

Figure 3.6. Number of public and non-public institutions of higher education according to educational profiles. Source: data provided by the Central Statistical Office of Poland 2014, http://www.stat.gov.pl.

The data of the Central Statistical Office of Poland for 2011 put the number of students at 1 764 060. In 2015 there were about 1 500 000 students. It is 6% less than was predicted by the Ministry of Science and Higher Education. The lower number of students is the result of the lower number of high school graduates. Over the past two years the number of applicants to institutions of higher education has dropped by almost one seventh. Young people are more and more frequently deciding to acquire practical skills to do specific jobs(nauka.gov.pl; stst.gov.pl). This is influenced by high unemployment rates among higher education graduates, particularly in humanities. High school leavers are guided by diverse reasons for which they choose a particular institution of higher education and a particular field of study. The number of students is shown in figure 3.7 by means of a median.

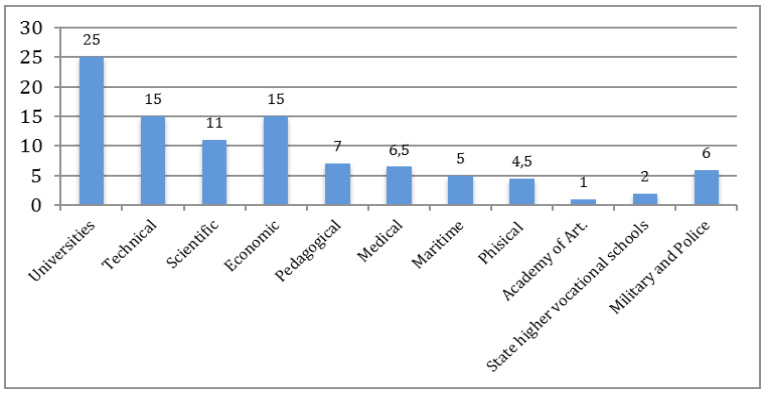

Figure 3.7. Medians of the number of students in public institutions of higher education according to their types in 2011, [number of students expressed in thousands]. Source: Higher Education in Poland, https://www.nauka.gov.pl g2/oryginal/2013.

The presented results show a median, that is the central value of the average number of students in various institutions of higher education in Poland. It shows the factual number of students expressed in thousands in 2011. The first place is occupied by universities. Next come technical schools, schools of economics and schools of life sciences. Public institutions of higher education educate twice as many students as non-public institutions of higher education.

The biggest university in Poland as for the number of students is Warsaw University followed by the Jagiellonian University in Cracow and Adam Mickiewicz University in Poznan. The biggest technical institution of higher education in Poland as for the number of students is AGH University of Science and Technology in Cracow followed by Wroclaw University of Technology and Warsaw University of Technology. As far as economic institutions of higher education are concerned, the biggest one is Cracow University of Economics. Numbers of students in the biggest institutions of higher education in Poland are presented in figure 3.8.

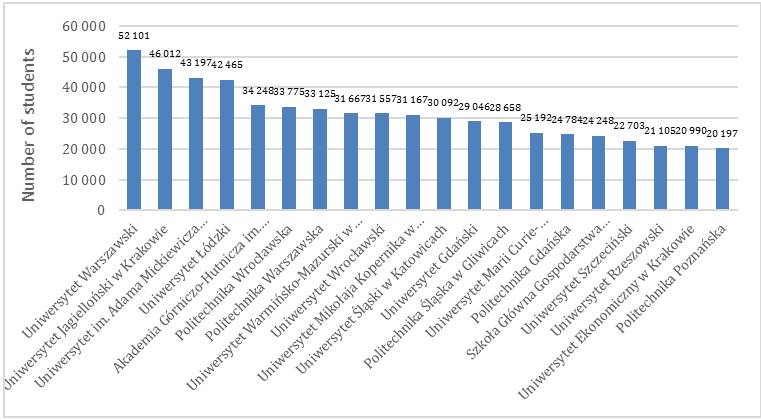

Figure 3.8. Number of students in the biggest institutions of higher education in Poland in 2013. Source: data provided by the Central Statistical Office of Poland, http://www.stat.gov.pl.

Education profile	**Percentage of students in a sub-group in 2013**	
	Females	**Males**
Pedagogical	**76%**	24%
Humanities	69%	31%
Artistic	68%	32%
Social	66%	33%
Economic and administrative	58%	42%
Legal	57%	43%
Journalism and information	66%	34%
Biological	67%	33%
Physical	58%	42%
Mathematical and statistical	58%	42%
IT	12%	**88%**
Medical	**78%**	22%
Social care	**85%**	15%
Engineering-technical	21%	79%
Production and processing	44%	56%
Architecture and civil engineering	38%	62%
Agricultural, forestry and fisheries	46%	54%
Veterinary	73%	27%
Services for people	69%	31%

Environmental protection	45%	55%
Transport services	20%	80%
Protection and security	41%	59%
TOTAL	**55%**	**45%**

Table 3.1. Distribution of students of various fields of study in Polish institutions on higher education according to gender. Source: nauka.gov.pl/g2/oryginal/2013.

Education profiles in higher education have their own specific character, which can be observed analyzing the gender of students choosing a particular field. Medical and social care fields of study are chosen by 5 times as many females as males. A reverse tendency can be observed looking at IT-related fields of study where there are 8 times as many males as females. As far as transport services are concerned, the ratio is 4:1. Table 3.1 contains the percentage of students in relation to the education profile and gender.

Changes in the education market can be observed by analyzing data from the last few years. One can notice the influence of the job market and employers on the demand for specific competences acquired by higher education graduates. Over the past four years demand for competences related to environmental management and engineering has dropped as many as two times. One can observe the constant level of demand for specialists in mechanics and mechanical engineering, automatic control and robotics. The only branch recording an increase in demand is computing. The results are summarized in table 3.2.

fields	**2010**	**2011**	**2012**	**2013**	**2014**
Management	37743	28608	27579	21623	19158
Pedagogy	30414	25839	20215	16227	13443
Law	26943	24581	24985	21787	20418
Civil engineering	30944	29888	24969	18926	15982
Computing	25435	27625	30639	31782	30309
Economics	24539	21523	20202	17090	16061
Administration	19255	15592	14869	13356	11722
Psychology	19921	15562	15621	14059	14700
Tourism and recreation	15339	13587	13493	11116	10947
Environmental engineering	19370	19330	18973	16664	10095
Finance and accounting	19997	19998	17642	16275	15014
Production management and engineering	16806	16662	17654	17234	13295
Automatic control and robotics	14207	14252	15815	17062	14914
Mechanics and mechanical engineering	15192	15868	17209	18294	15178
Land management	13087	14779	16854	12690	10327

Table 3.2. The most popular fields of study according to the general number of candidates. Source: data provided by the Central Statistical Office of Poland, http://www.stat.gov.pl.

3.5. Foreign students in Poland

Interest in studying in Poland changed along with the change in Poland's image in the international arena. 2004 (the year of Poland's accession to the EU) saw the arrival of 8,829 students wishing to study in Poland and in 2013 the number stood at 46,000 students. It can be observed that a fair share of foreign students is made up by Erasmus+ students. It is one of the most popular student exchange programs. The number of Erasmus+ students coming to Poland increased from 2,332 in 2004 to over 11,000 in 2013.

The most numerous group of foreign students in Poland is made up by Ukrainian citizens. In 2011 there were 6,321 students from Ukraine. Other countries represented by students coming to study in Poland include Belarus, Norway, Spain or Sweden. There are also students from the USA, Canada, China or Taiwan.

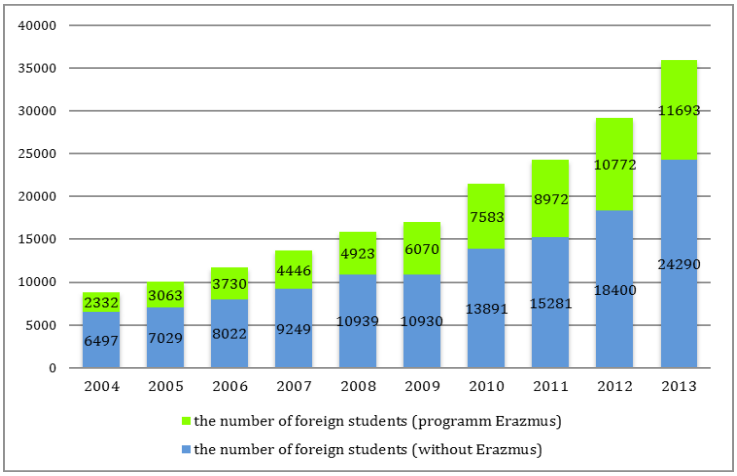

Figure 3.9. Number of foreign students in Poland between 2004 and 2011. Source: https://nauka.gov.pl.

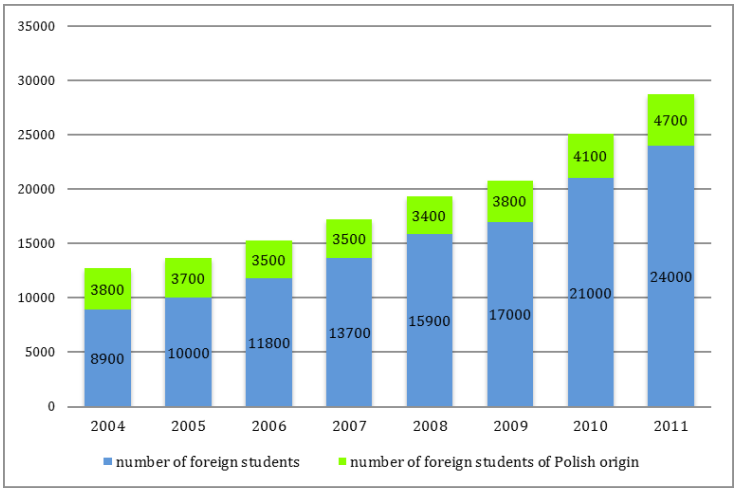

Figure 3.10. Share of students of Polish origin among foreigners studying in Poland [expressed in thousands]. Source: http://nauka.gov.pl /g2/oryginal/2013.

3.6. Conclusions

The essence of tertiary level education is to broaden mental horizons and equip young people with competences sought after on the job market (Zechlin, 2008). Analyzing data related to the unemployment level in groups of various educational status, one may conclude that there is a problem in Poland with adjusting the educational offer to the requirements of the job market, which is shown in table 3.3.

	Education	Humanities and arts	Social sciences, economics, law	Science	Health and social care	The technique, industry, building	Agriculture	Services
Employed	12	7	28	9	6	11	2	3
Unemployed	12	6	34	7	4	9	2	4
Non-active	14	9	28	6	4	10	4	4
% unemployed/ % employed	1,1	0,9	1,2	0,8	0,6	0,8	1,1	1,5
N	1741	992	4207	1245	816	1581	358	441

Table 3.3. Share of graduates in particular fields of study among the unemployed, employed and professionally inactive. Source: BKL – Badanie Ludności 2010-2014 http://www.uj.edu.pl // documents/102715934/ 2e0bba6c-e1e6-4248-8a4e-443f8573fca0.

In the light of the job market related research, one can observe that the highest level of unemployment is recorded in the area of services, where competences acquired in various fields of study are made use of. A particular attention is also paid to social, economic and legal sciences in which professionally active people make up a low percentage in the analyzed group with such competences.

One can also notice that secondary education has been more and more effective in dealing with such an adjustment, partly because of extensive research in this area carried out for decades in Poland (cf. Programme: Czas Zawodowców (Time of Professionals), Doradca Zawodowy (Professional Adviser) and others). It is to be hoped that measures being taken to introduce changes in higher education will translate into offering graduates jobs in which they are trained at tertiary level.

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4. THE HIGHER EDUCATION SYSTEM IN SLOVAKIA

Kamila BORSEKOVÁ, Anna VAŇOVÁ, Katarína VITÁLIŠOVÁ

4.1. Introduction

The chapter deals with the identification of higher education system in Slovakia. The first part of the chapter is devoted to the identification of higher education system in Slovakia and its structure. It describes three levels of higher education – bachelor study, master study and doctoral study and describes possible forms of study – internal and external. It defines degrees and length of study in different disciplines. The part of the first section is devoted to student assessment. The second part of the chapter is devoted to characteristics of higher education market in Slovakia. Slovak Republic is country in the Central Europe and covers an area 49,036 km². Its population compromises of 5.44 million people. Before 1993 it was a part of Czechoslovakia. The official language is Slovak.

4.2. Higher Education System in Slovakia

Ministry of Education, Science, Research and Sport of the SR is the central body of state administration of the Slovak Republic for primary, secondary and tertiary education, school facilities, lifelong learning, science and for the state's care of physical culture and youth. In the areas of higher and further education, the Ministry sets priorities and objectives, undertakes conceptual, coordination a standards setting activities consistent with higher education policy in the Slovak Republic. In addition, the Ministry is responsible for the following:

- creates conditions for the development of colleges and universities and higher education,
- coordinates the activity of higher education institutions,
- allocates funds from the state budget to individual higher learning institutions and controls, whether resources are used expediently, in accordance with the state policy in the area of higher education development , the state policy in the area of science a technology development and with regard taken of the evaluation of college and faculty work by the Accreditation Committee,
- registers the university statutes and faculty statutes,
- grants approval to set up, amalgamate, divide and close faculties of universities, in accordance with the state policy in the area of higher education, at the advice of the Rector (Chancellor), with prior position solicited from the Accreditation Committee,
- in the area of conferring academic science degrees and academic arts degrees, the Ministry evaluates the activity of university /faculty bodies empowered to decide about conferring these degrees and approves the criteria for uniform assessment of scientific or artistic level of the applicants applying to be conferred these degrees in the relevant science or arts discipline,
- ensures in a comprehensive fashion, the activity of the Culture and Education Grant Agency,
- validates degrees and other documents of tertiary education issued by a foreign college/ university, in the courses of study not offered by tertiary schools in the Slovak Republic (Borseková, Maráková, Vaňová, Vitálišová, 2016).

In Slovakia, every citizen has the right to study at a higher education institution in the selected branch of study program. The basic condition for the admission to bachelor study is graduation from complete secondary education or complete secondary vocational education (the education completed by the secondary school-leaving examination). Higher education institution

can admit applicants of accredited study program which are in the list of study programs. According to Higher Education Act only the higher education institutions have the right to provide and organize higher education and hence they are the only institutions empowered to admit students to higher education study.

4.3. The structure of higher education in Slovakia

The study at the higher education institutions in the Slovak Republic is governed by the Act on higher education. Pursuant to the transition provisions of the Act on higher education, higher education institutions can enroll students only to the accredited study programs that are pursued on the basis of the credit system.

Every citizen, including foreign nationals, has the right to study at a higher education institution in the elected study program (provided he or she meets the basic admission conditions under Section 56, and other conditions as laid down by the higher education institution offering the relevant study program, under Section 57 paragraph 1).

There are 23 public and 12 private universities and colleges in Slovakia. Most of them apply entrance exams. Public ones are free of charge, although some small fees may apply for distance study. The fee for distance study are regulated by each university.

University Towns in Slovakia are capital city Bratislava, the capitals of other seven self-governing regions Košice, Banská Bystrica, Žilina, Nitra, Prešov, Trnava, Trenčín. Universities are located also in smaller towns Martin, Liptovský Mikuláš, Ružomberok and Zvolen. Higher education institutions are legal entities. They include public higher education institutions, state higher education institutions, private higher education institutions.

Public schools of higher education are the basic case. They are established by law. The vast majority of schools of higher education is of this type. They are financed by the government and possible business activities.

State institutions of higher education are all military, police and medical schools. They are established through the corresponding ministries of the government. They are financed by the government and possible business activities. Private institutions of higher education are established and financed by non-government institutions, but approved by the Ministry of Education. This type of school is still quite rare.

The study programs are implemented at three levels: Study programs may combine the first two levels of higher education in one complex.

1. The study program of first level includes the Bachelor's-degree study programs.
2. The study programs of second level and the study programs combining the first two levels of higher education (hereinafter referred to as "combined study program") include:
   - Master-degree study program,
   - Engineer's degree study program,
   - The doctor's degree study program.
3. The PhD-degree study program is a third-level study program.

The following figure describes the organization of higher education system in Slovakia.

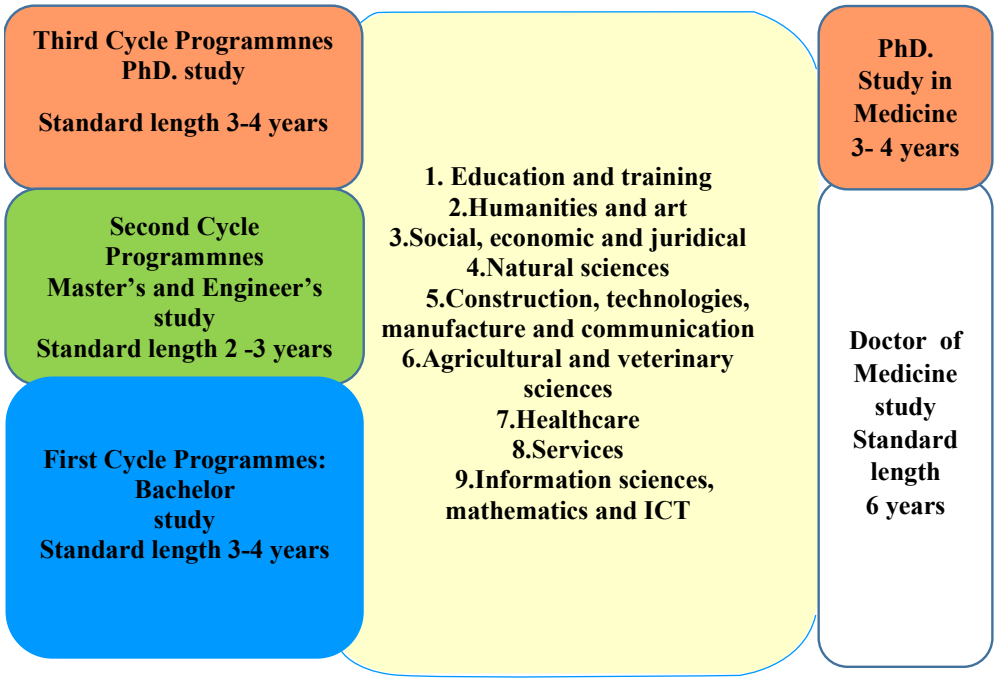

Figure 4.1. Organization of higher education in Slovakia. Source: http://www.euroeducation.net/prof/slovakco.htm

The study program can have a full-time or part-time (external) form. A full-time or a part-time study program can be pursued using a presence method, a distance method, or a combined method of learning. The presence method of learning consists in the teaching involving direct contact between the teacher and the student. Full-time study programs are held using the presence method. The distance method substitutes the direct teacher-student contact with a computer network-based communication. Many part-time (external) study programs are organized using the distance method of learning. A final thesis is an integral part of study in each study program, its defense constituting one of the state examinations. The final work of a study in a bachelor's study program, is the bachelor thesis, the final work of a study in a second-level or a combined study program, is the diploma thesis; its defense being one the state examinations.

The first level of University study has the form of bachelor study. The basic admission conditions for a bachelor-degree program or to a combined study program is the completion of the upper-level of secondary education or secondary vocation education (i.e. secondary education finished with a school leaving examination). The Bachelor study program as the study program of the first level aims at the acquisition of theoretical and practical knowledge based on the current state of science and art and at mastering their use in the exercise of a profession or the follow-up of higher education studies. The first stage usually lasts for three or four years, covering all disciplines except Medicine, Veterinary Medicine, Pharmacy and Law. After completion, graduates are granted Certificates and awarded the degree of Bachelor - Bc.

The second level of University study has the form of master study. The basic admission condition for a second - level study program is the completion of a first-level study program (bachelor). The standard duration of study in a second-level study program, including practice, is

minimum one and maximum three years, so as to make the total standard duration of study in a first-level study program and the subsequent second-level study program, in the same or related course of study, at least five years. The standard duration of study for the study programs combining the first and second levels of higher education is minimum four and maximum six years. Courses in the Humanities, Education and Social Sciences, Natural Sciences, Pharmacy, Theology, Law and Art last for five years. Graduates of the master study are granted academic title "Master", abbreviation "Mgr.", within art study programs academic title "Master of Art", abbreviation "Mgr. Art."

Graduates of the engineering study in Economics, Agriculture, Chemistry and technical fields last for five or five-and-a-half years and are granted academic title "Engineer", abbreviation "Ing.", in area of architecture and urbanism academic title "Engineer Architect ", abbreviation "Ing. arch." or Ing. In Medicine, studies last for six years and graduates are granted the academic degrees of Doctor - "Doctor of General Medicine", abbreviation "MUDr.", in area of human dentistry are granted academic title "Doctor of Dentistry", abbreviation "MDDr.", in area of zoopharmacy are granted academic title "Doctor of Zoopharmacy", abbreviation "MVDr."

Graduates of the study programs that obtained academic title „Master" are entitled to accomplish rigorous exam including also dissertation of the rigorous thesis in study field they have obtained university education or in similar study field. After its accomplishment they are granted following academic title by the universities: in natural science study programs "Doctor of Natural Sciences", abbreviation "RNDr.", in pharmaceutical study fields "Doctor of Pharmacy", abbreviation "PharmDr.", in human and art sciences study programs "Doctor of Philosophy", abbreviation "PhDr.".

The study program of the third level is the PhD study program (and specialized training in medicine). The basic admission condition for a PhD program is the completion of a second-level study program or a combined study program (master, engineer or doctor). The standard duration of study for a PhD program, in the full-time form, is minimum three and maximum four years, and, in part-time (external) form, maximum five years.

The prerequisites for the completion of a PhD study include taking the dissertation examination, which is one of the state examinations, and the defense of the dissertation. Upon successfully completing it, students are awarded the academic degrees. The first level leads to the degree of Bachelor; the second level, the complete higher education, leads to the academic degrees of Master, Engineer, Doctor and the third level leads to the Doctorate/PhD, see more details in following table 4. 1. (Borseková, Maráková, Vaňová, Vitálišová, 2016).

	Bachelor level	Magister level	Examina Rigorosa	Doctoral level
Economy Technology Chemistry Agriculture	Bc.	Ing.		PhD.
Architecture	Bc-	Ing. arch.		PhD.
Medicine	Bc.	MUDr.		PhD.
Natural Sciences	Bc.	Mgr.	RNDr.	PhD.
Pharmacy	Bc.	Mgr.	PharmDr.	PhD.
Humanities	Bc.	Mgr.	PhDr	PhD.

Arts	Bc.	Mgr.art.		Artis Doctor "ArtD."
Law and Security	Bc.	Mgr.	JUDr.	PhD.
Teacher Training and Sports	Bc.	Mgr.	PaedDr.	PhD.
Theology	Bc.	Mgr.	ThDr.	ThLic.ThDr.

Table 4.1 Academic degrees in Slovakia. Source: Ministry of Education.

Student assesment

Details on evaluation of student performances during the study are set up in study rules and study guidelines of universities and faculties. Procedures of evaluation of students may be different according to field of study and disciplines. The organization of all levels and forms of higher education study is based on the credit system.

Higher education in certain fields is obtained by studying an accredited study program in this field of study. Study program is a set of educational activities (lecture, seminar, training, professional experience, field work) grouped together in objects of study and set rules devised by successful completion of these objects while maintaining those rules may to obtain a university degree on the relevant level.

Credits are numerical values assigned to the course that reflect the amount of work necessary for their graduation. Student's standard load for academic year is 60 credits, 30 credits per semester. Using credits is usually determined by the rules and conditions for the creation of curricula and the successful completion of study program, in particular the number of credits can student enroll in individual years of study, the number of credits needed to progress to the next part of the study and at regular completion of the study program. Courses are awarded by different numbers of credits according to their difficulty. Students are attending courses and by completing (each course have own requirements and conditions of its completing, all conditions and requirements for passing are set up in advance in curricula) the course they achieve credits. Within the study program are courses divided into compulsory, elective and optional according to their relevance. To obtain a higher education student must successfully complete all compulsory courses of the study program, and the specified number of courses from a set of elective courses of the study program. Other courses graduate student according to own choice with aim to reach the minimum number of credits needed for completion of the study.

The course completion is evaluated by a mark. A mark expresses the quality of acquisition of knowledge. The result of evaluation is recorded in study book (index) as well as in the electronic academic information system (AIS). Evaluation by a mark is carried out according to the system of grading composed of six grades:
- A – excellent = 1 (100 – 94 %)
- B – very good = 1.5 (93 – 87%)
- C – good = 2 (86 – 80%)
- D – satisfactory = 2.5 (79 – 73%)
- E – sufficient = 3 (72 – 65 %)
- FX – fail = 4 (64% and less).

The percentage for fulfillment the mark may vary in different study programs and disciplines. The student shall obtain credits for the course when result for the course completion is from

grade A to E. For evaluation of overall study records of the student in a defined period the use is made of course weighted average. It is counted in such a way that the products of number of credits and numerical assessment in the period assessed shall be summed up and the result shall be divided by total number of credits registered by the student for the given period. In case of healthcare study programs the students keep books of records on clinical practice for recording individual operations they did during practicing in clinical workplace. A condition for regular completion of studies is the state examination and/or a final thesis defense. The state examination and/or thesis defense is organized in the form of colloquium.

4.4. Characteristics of higher education market in Slovakia

In Slovakia, there are 35 Slovak high schools with diversified orientation, including 12 universities, 11 colleges (1 College of Economics, 5 Technical Colleges, 3 Colleges of Art and 2 Military and Police Academies), 12 private colleges and 6 foreign colleges.

Private higher education institutions are established by legal entities with registered office in Slovakia upon the state approval. All higher education institutions provide studies in accredited study programs. Their structure by the regions and by the owner presents following table:

Universities and colleges in Slovak regions	public	state	private	Total
Bratislava region	5	2	5	12
Trnava region	2	0	2	4
Trenčín region	1	0	2	3
Nitra region	3	0	0	3
Žilina region	2	1	0	3
Banská Bystrica region	3	0	1	4
Prešov region	1	0	1	2
Košice region	3	0	1	4
Total Slovakia	20	3	12	35

Table 4.2a. Structure of the universities and colleges in Slovak regions.
Source: Ministry of Education, 2016.

The public institutions of higher education are established pursuant to the Act on Higher Education. The bodies of their academic autonomy are the Academic Senate, Rector, Scientific Council and Disciplinary Commission. It is these bodies, who decide on their organization, activities and administration. In the year academic year 2015-2016 more than 100 000 students of Slovak nationality are studying at 20 public universities in Slovakia in daily form and almost 20 000 in distance form, both in the master study and bachelor study. More detailed information including gender and division to domestic and foreign students find in the table below (tab 4.b.).

Among state universities they are classified military academies, police academies and medical colleges. At military colleges study students who carry out military service. Police colleges educate specialists particularly for the Police Force. Medical colleges educate students who are preparing for the different categories of health workers. The state institutions of higher edu-

cation are established by the ministries of the Government of the Slovak Republic. Following table shows number of students in the academic year 2015-2016 at state universities.

Public Universities	Number of faculties	Students in daily form				students in distance form			
		citizens of the Slovak Republic		other citizens		citizens of the Slovak Republic		other citizens	
		total	women	total	women	total	women	total	women
UNIVERZITA KOMENSKÉHO	13	18234	12250	2057	1072	2671	1710	60	34
UNIVERZITA P.J.ŠAFÁRIKA	5	5344	3686	1072	475	505	327	2	1
PREŠOVSKÁ UNIVERZITA	8	6952	5236	148	84	1692	1311	60	25
UNIV.sv.CYRILA a METODA	4	4624	3294	25	12	1343	886	17	11
KATOLÍCKA UNIVERZITA	4	3283	2468	30	23	1058	910	17	11
UNIVERZITA J.SELYEHO	3	1253	719	100	50	310	234	38	22
UNIVERZITA VETERIN.LEK.	1	1678	1375	273	214	32	27	2	2
UNIVER. KONŠT. FILOZOFA	5	6609	5010	158	111	1904	1334	10	4
UNIVERZITA MATEJA BELA	6	6474	4486	159	84	2031	1314	11	8
TRNAVSKÁ UNIVERZITA	5	3587	2891	42	25	1340	1111	27	20
SLOV.TECHN. UNIVERZITA	7	13005	4419	262	65	0	0	0	0
TECH. UNIVERZITA KOŠICE	9	7819	2369	248	71	1015	345	2	1
ŽILINSKÁ UNIVERZITA	7	7396	2489	81	23	910	337	24	9
TRENČ. UNIV. A.DUBČEKA	4	1868	1201	39	21	711	429	42	34
EKONOMICKÁ UNIVERZITA	7	6840	4499	90	48	1229	809	8	6
SLOV. POĽNOHOSP. UNIV.	6	6266	3637	106	59	1614	834	13	8
TECH. UNIVERZITA ZVOLEN	4	2529	1066	21	8	720	269	89	17
VŠ MÚZICKÝCH UMENÍ	3	843	464	104	61	0	0	0	0
VŠ VÝTVARNÝCH UMENÍ	1	507	317	52	36	0	0	0	0
AKADÉMIA UMENÍ	3	466	262	25	16	0	0	0	0
Slovak Republic	105	105577	62138	5092	2558	19085	12187	422	213

Table 4.2b. The number of students at bachelor and master degree in the Slovak Republic in academic year 2015-2016 at non public universities. Source: Ministry of Education, 2016.

State Universities	Number of faculties	Students in daily form				students in distance form			
		citizens of the Slovak Republic		other citizens		citizens of the Slovak Republic		other citizens	
		total	women	total	women	total	women	total	women
SLOV.ZDRAVOTNÍCKA UNIV.	4	1038	766	141	59	689	513	276	218
AKADÉMIA OZBROJ.SÍL	1	204	35	0	0	133	27	0	0
AKADÉMIA POLIC.ZBORU	1	582	298	1	1	571	127	0	0
Slovak Republic	6	1824	1099	142	60	1393	667	276	218

Table 4.2c The number of students at bachelor and master degree in the Slovak Republic in academic year 2015-2016 at private universities. Source: Ministry of Education, 2016.

The number of students at bachelor and master degrees study programs in the Slovak Republic in academic year 2015-2016 at private universities is much lower than at public universities and more preferred form of study is distance form of study. (Borseková, Maráková, Vaňová, Vitálišová, 2016).

Private Universities	Number of faculties	Students in daily form				students in distance form			
		citizens of the Slovak Republic		other citizens		citizens of the Slovak Republic		other citizens	
		total	women	total	women	total	women	total	women
AKADÉMIA MÉDIÍ	1	142	94	0	0	0	0	0	0
BRATISLAVSKÁ MEDZ.ŠKOLA	1	50	26	0	0	0	0	0	0
VŠ DANUBIUS	3	168	89	3	1	877	465	98	56
PANEURÓPSKA VŠ	5	1344	713	72	41	874	471	353	178
VŠZaSP sv.ALŽBETY	1	1825	1437	260	232	4434	3256	1673	1458
VŠ EKON. a MANAŽMENTU	1	559	313	5	4	2357	1586	59	22
VŠ MANAŽMENTU	1	535	261	34	15	303	171	15	4
STREDOEURÓPSKA VŠ	1	118	67	11	5	167	76	8	5
VŠ MEDZIN.PODNIKANIA	1	193	100	8	3	188	111	223	152
HUDOBNÁ A UMELECKÁ AKAD	1	19	3	13	4	0	0	0	0
VŠ BEZPEČN. MANAŽÉRSTVA	1	635	172	2	1	726	204	6	2
Slovak Republic	18	5810	3419	411	308	11351	7156	2965	2107

Table 4.2d. The number of students at bachelor and master degree in the Slovak Republic in academic year 2015-2016 at private universities. Source: Ministry of Education, 2016.

However, the global development of the graduates from high schools that want to continue their study at the universities is emerging during last years. The situation illustrates figure 4.2a that includes the period from 2008 to 2015.

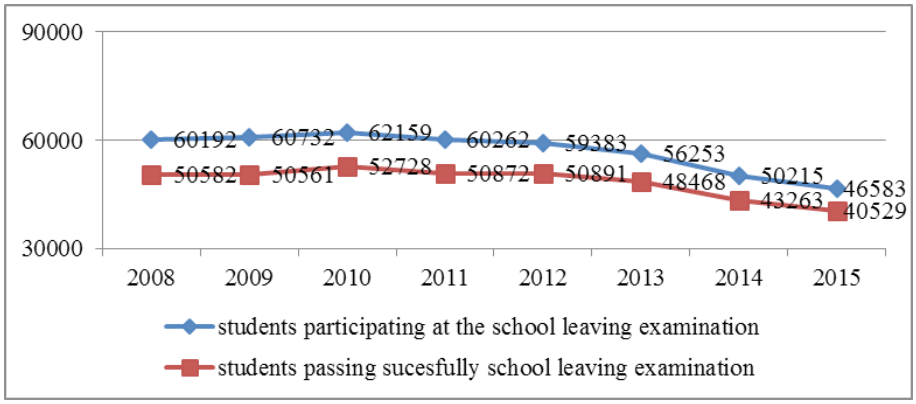

Figure 4. 2a. Organization of higher education in Slovakia. Source: Own workmanship by the data of Institute of Information and Educational Prognoses and National Institute of Certificated Measurement in Education, 2016.

In the figure 4.2a, we can see that the demographic trend is long-termly negative and the number of graduate students has been decreasing each year (except in 2010 because of the higher birth rate in 1990 and 1991). By the student portal the number of graduate students in 2016 is 45 358, what again confirms the decreasing tendency in the number of graduates.

Data about the number of graduate students are the basic information needed to create the plans of accepted students at the universities. Agency ARRA (2015) informs in the annual report about the development of data about students that applied for the university study; that were accepted and enlisted to the universities during 2004 -2014.

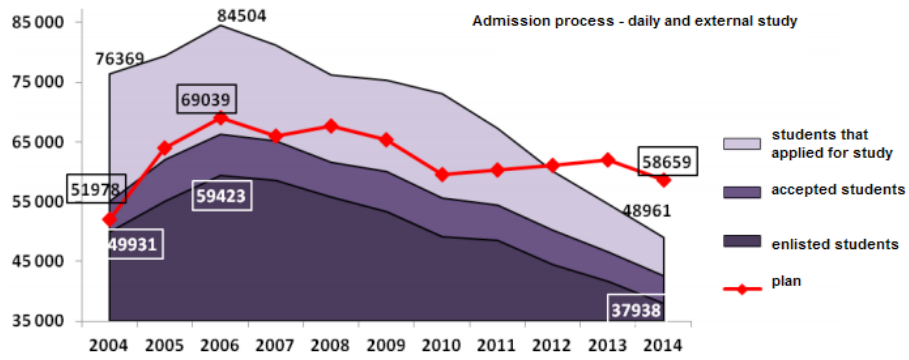

Figure 4. 2b. Admission process – daily and external study in 2004-2014. Source: ARRA, 2015.

The figure 4.2b shows that the demand on university education in the first researched years was higher as the offer and capacity of the universities was fulfilled in 96%. Next years, the interest in university education had been increasing and as a reaction the universities had gradually increased also the number of accepted students. However, in 2006 the situation changed and the interest in university education started to decrease, but the universities did not react adequately to the new development of potential students. The plans of accepted students were not reduced as well as the capacities of the universities were not changed. It resulted in 2012 in the fact that the capacities of universities were even higher as the number of students that applied for the university studies. Moreover, in that academic year were enlisted only 83 % of accepted students at the universities. The reaction of the universities to this situation was to simplify the entrance examination, what caused partially in 2014 the increase in success rate in entrance examination to 87 % (ARRA, 2015). Most of universities lost the chance to select accepted student and on the other side, the students have had more possibilities to choose the future university education because they are not limited by the entrance examinations.

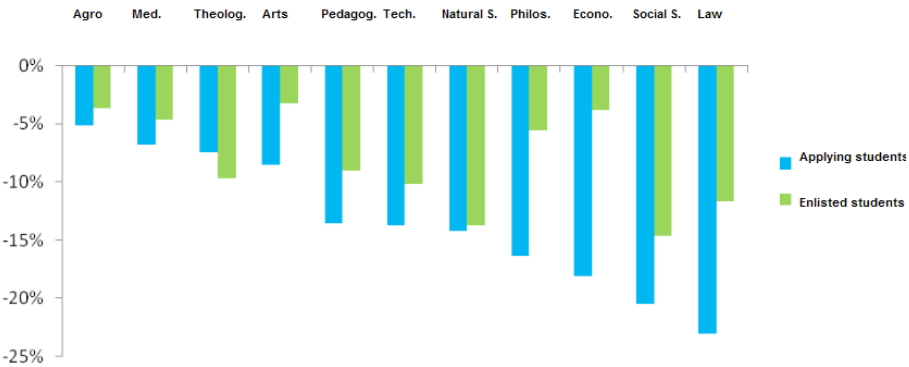

Figure 4.2c Interannual reduction in interest in study fields at universities. Source: ARRA, 2016.

Because of the inadequate decrease in the university capacities following the negative demographic trends, was fulfilled in the first year of university studies only 65% of university capacities. This is due to the fact that despite of the lower number of admitted students a number of teachers and the volume of allocated subsidies are relatively stable. If we combine information from Figures 4.2a and 4.2b, and we expect that in 2016 there will be no dramatically reduced plan of accepted students (estimation is decline to 55 000). We can conclude that if all students that successfully finished the high school, will apply for university studies, the university capaci-

ties will be filled to 82,5%. The situation is alarming because the increasing volume of unused university capacity leads to a gradual degradation of quality of admitted students. It is necessary that the schools focus on quality development in the process of education and research. The interannual reduction in interest in study at university affects every study field (figure 4.2c).

Refer to figure 4.2c., a reduction in the number of students that applied for the university study is the evident in law, social sciences, economics and philosophy. However, in comparison with the previous years the study fields – economics, agriculture, food industry and medicine are characterised by the lowest gradual decrease, less than 5%, the situation is similar also in the study programs of arts.

Currently, there are 22 faculties in economics in Slovakia that offer similar or same study programs in bachelor, master and PhD studies. By the annual published ranking of the university institutions (ARRA, 2016) to the best economic faculties belong Faculty of Economics, Technical University Košice, Faculty of National Economy, University of Economics in Bratislava, Faculty of Economics and management, Slovak Agricultural University in Nitra. The Faculty of Economics, Matej Bel University is on the 4th place with the stabile position during last 4 years.

Change	Order	Faculty	Indicators						Previous order		
			Education	Attractiveness	Research and science	PhD Students	Success rate of grants	Average in 2015	2014	2013	2012
=	1	Ekonomická fakulta TUKE	70	69	86	88	98	82,3	1	1	1
↑	2	Národohospodárska fakulta EU	84	58	33	58	42	55,2	3	2	3
↓	3	Fakulta ekonomiky a manažmentu SPU	64	49	58	48	25	49	2	2	2
=	4	Ekonomická fakulta UMB	72	55	48	55	13	48,8	4	4	4
=	5	Podnikovohospodárska fakulta EU	68	31	44	80	16	47,9	5	7	11
↑	6	Fakulta podnikového manažmentu EU	76	57	28	65	10	47,3	10	8	10
↑	7	Fak. prev. a ekonomiky dopravy a spojov ŽU	76	61	14	62	13	45,3	9	10	6
=	8	Fakulta hospodárskej informatiky EU	80	57	32	45	8	44,4	8	5	7
↓	9	Fakulta managementu UK	56	79	29	45	14	44,2	7	9	9
↑	10	Fakulta ekonómie a podnikania PEVŠ	88	59	29	37	0	42,7	11	11	8
↓	11	Obchodná fakulta EU	73	59	22	44	11	42	6	6	5
=	12	Fakulta manažmentu PU	55	47	28	31	17	35,6	12	12	12
=	13	VŠ medzinár. podnikania ISM Slovakia	64	45	0	0	8	23,6	13	13	13
=	14	Ekonomická fakulta UJS	58	31	15	0	3	21,4	14	14	14

Table 4.2e Ranking of faculties in the economic field of study. Source: ARRA, 2016.

By our own research, to the most dominant economic fields that are a part of offer in the bachelor study programs of universities, belong tourism, economy and management of businesses, management, regional development and public economics. The list of faculties, which compete in the offer of these programs, is presented in table 4.2f.

Study field	Universities	Number of universities
Tourism	EUBA, PU, EF UMB	3
Economy and management of businesses	EUBA, Paneurópska VŠ, SPU, STU, T. U. Alexandra Dubčeka, Univerzita J. Selyeho, UK, Vysoká škola ekonómie a manažmetu verejnej správy, Vysoká škola manažmentu v Trenčíne, Žilinská univerzita, EF UMB	10
Finances, banking and investment	EUBA, TUKE, UKF, Žilinská univerzita, EF UMB	5
Management	Dubnický technologický inštiút, EUBA, PU, Paneurópska VŠ, SPU, Vysoká škola manažmentu v Trenčíne, Žilinská univerzita, EF UMB	8
Territorial management, regional development	EUBA, TUKE, T.U. Alexandra Dubčeka, UKF, Univerzita PJŠ, Univerzita sv. Cyrila a Metoda, Vysoká škola ekonómie a manažmetu verejnej správy, EF UMB	8
Public economics and management	EUBA, TUKE, T.U. Alexandra Dubčeka, UKF, Univerzita PJŠ, Univerzita sv. Cyrila a Metoda, Vysoká škola ekonómie a manažmetu verejnej správy	7

Table 4.2f List of economic faculties by economic field in bachelor study programs. Source: own workmanship.

The highest competition in economic university education is in the field of economy and management of businesses. The competition is high also in the field of management, territorial management and public economics. The less developed competition is in field of tourism and finances, banking and investments within the bachelor study programs.

Study field	Universities	Number of universities
Economics and management of tourism	EUBA, EF UMB	2
Economics and management of small and medium enterprises	EUBA, Paneurópska VŠ, PU, STU, T. U. Alexandra Dubčeka, Univerzita J. Selyeho, UK, Vysoká škola ekonómie a manažmentu verejnej správy, Žilinská univerzita, EF UMB	10
Finances, banking and investment	EUBA, TUKE, Žilinská univerzita, EF UMB	4
Marketing Management in Business	EUBA, UKF, EF UMB	3
Territorial management, regional development	EUBA, TUKE, UKF, Univerzita PJŠ, Vysoká škola ekonómie a manažmentu verejnej správy, EF UMB	6
Economics of public sector	EUBA, TUKE, UK, Univerzita PJŠ, Univerzita sv. Cyrila a Metoda, Vysoká škola ekonómie a manažmentu verejnej správy, EF UMB	7

Table 4.2g List of economic faculties by economic field in master study programs. Source: own workmanship.

In the master study programs, the highest number of universities that offer the similar study programs is in the field of economics and management of small and medium enterprises, economics of public sector and territorial studies. The less competition at the economic oriented faculties in Slovakia is in the field of marketing management in businesses and finances, banking and investment.

In the PhD study programs, the offer is not so diversified. The main fields of PhD study programs covers tourism, economics and management of enterprises, finances and public economy. The competition is highest in economics and management of enterprises, and only one faculty offers the PhD study program in tourism.

Study field	Universities	Number of universities
Tourism	EF UMB	1
Economics and management of enterprises	EUBA, Paneurópska VŠ, PU, STU, UK, Žilinská univerzita, EF UMB	7
Finances	EUBA, EF UMB	2
Public economics and policy	EUBA, Univerzita sv. Cyrila a Metoda, EF UMB	3

Table 4.2h List of economic faculties by economic field in PhD study programs.
Source: own workmanship.

The offer of university study in the Slovakia includes various possibilities in all level of education. The university education in the Slovakia develops historically from the 16th century. It overcomes many important reforms and within the admission process of Slovakia to the EU and after it has implemented all standards and requirements of the European Union. Nowadays, there is an ambition to strength higher quality university environment with the excellent study programs offering to the national and international students.

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5. THE HIGHER EDUCATION SYSTEM IN SLOVENIA

Jernej BELAK, Mojca DUH, Tjaša ŠTRUKELJ

5.1. The structure of the education system

Tertiary education in Slovenia consists of short-cycle higher vocational education and higher education. Slovenia joined the Bologna Reform in 1999 and, as a result, a three-cycle study structure was introduced. Both public and private institutions provide higher vocational and higher education. According to the most recent data, there are four universities (University of Ljubljana, University of Maribor, University of Primorska and University of Nova Gorica), a public independent institution of higher education (Faculty of Information Studies Novo mesto), one International Association of universities (EMUNI-EURO Mediterranean University), and 44 private higher education institutions in Slovenia. Tertiary education attainment in Slovenia is above the EU average. However, the number of students in tertiary education has been decreasing significantly every year for the last five years. Two basic distinctions in terms of gender inequality can be observed in tertiary education in Slovenia. One is the vertical separation showing that fewer men are involved in tertiary education than women. Another is horizontal separation indicating that women and men choose different fields of study.

Slovenia lies at the intersection of four major European geographic regions that are the Alps, the Dinarides, the Pannonia Plain, and the Mediterranean. Slightly over two million people live in Slovenia on about twenty thousand square kilometres. The age structure of the population is changing due to the low birth rate, longer life expectancy and lower mortality. Statistical data have shown the upward trend of the proportion of children and young people aged under 14 year and of the proportion of older people (over 65 years of age) in recent years; however, the proportion of active working population has been declining (aged 15 to 64 years) (Overview Slovenia, 2016).

The education system in Slovenia consists of several educational levels and institutions (Figure 5.1).

Pre-school education in Slovenia is an integral part of the education system and is uniform for all children from the age of one to six. Municipalities are responsible for the establishment of kindergartens and thereby for the implementation of preschool education programmes. The participation of children in preschool education is not mandatory in Slovenia (Pre-school education, 2016).

The participation of children aged six to fifteen years in basic education in Slovenia is compulsory and is organized in a single structure of nine-year basic school. Basic education is provided by public and private schools (less than 1% of students attend private schools) and educational institutions for children with special needs (Basic education, 2016).

Upper-secondary education takes two to five years and is intended for generations of 15-year-olds. It includes general education (i.e., different types of general upper secondary school programmes and the Matura course), and vocational and technical education (Upper secondary education, 2016). Tertiary education in Slovenia consists of short-cycle higher vocational education and higher education and is explained in more detail in the continuation.

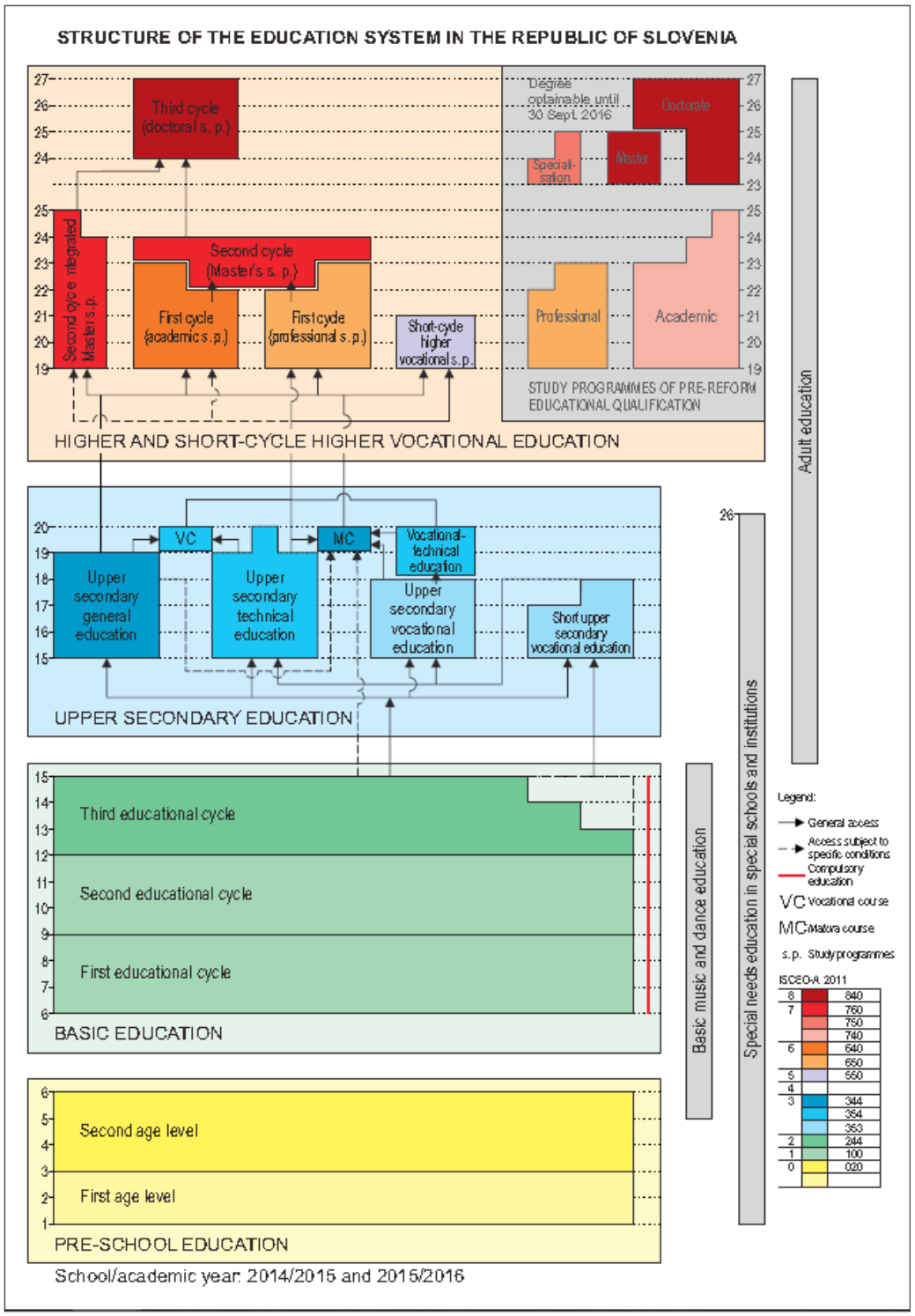

Fig. 5.1. The education system in Slovenia. Source: Education system Slovenia (2016)

5.2. The structure and functioning of the higher education system

Tertiary education in Slovenia consists of short-cycle higher vocational education and higher education (Table 5.1), both being under the responsibility of the *Ministry of Education, Science and Sport* since 2012 (Education system, 2014). Slovenia joined the Bologna Reform in 1999. A result of this reform was a three-cycle study structure. At the same time the European Credit Transfer and Accumulation System (ECTS) was introduced (Higher education system, 2016). The analysis of the structure, functioning and characteristics of the Slovenian higher education system is based on the results of the research conducted within the Erasmus+ project (Belak et al., 2016) with additional findings prepared.

Short-cycle higher vocational education	120 ECTS
First cycle study (university/academic and high professional) programmes (*bachelor's degree*)	180–240 ECTS
Second cycle study programmes (*master's degree*)	60–120 ECTS
Integrated (uniform) master study programmes	300–360 ECTS
Third cycle (doctoral) study programmes (*doctoral degree*)	180 ECTS

Table 5.1. Tertiary education in Slovenia. Source: Education system (2014)

The *Higher Vocational Education Act* sets the legal basis for short-cycle higher vocational education in Slovenia, which is provided by both public and private higher vocational colleges (Higher education Slovenia, 2014). All short-cycle higher vocational education programmes last two years (120 ECTS). Higher vocational colleges award diplomas in accordance with the *Higher Vocational Education Act* and the *Professional and Academic Titles Act*. In accordance with the *Decree on the Introduction and Use of Classification System of Education and Training*, these diplomas are classified at level 6/1 (Education system, 2014).

The *Higher Education Act* sets the legal basis for higher education in Slovenia, which is provided by both public and private universities, and other higher education institutions (e.g. faculties, art academies). The first cycle study programmes (i.e. bachelor's degree programmes) are either academic or professional (Higher education Slovenia, 2014). Their duration is defined by years (three to four years) and ECTS credit points (180 to 240 ECTS). Higher education institutions issue a degree (a diploma) to the graduates and confer professional titles in accordance with the *Professional and Academic Titles Act*. Those graduating after the 2000/01 academic year also receive a diploma supplement together with their degree. The first cycle study programmes are classified at level 6/2 according to the *Decree on the Introduction and Use of the Classification System of Education and Training* (Education system, 2014).

The second cycle programmes are master's programmes. According to the *Decree on the Introduction and Use of the Classification System of Education and Training*, these programmes are classified at level 7, and they encompass 60 or 120 ECTS credit points and last one or two years. The duration of an integrated (uniform) master's study programme corresponds to the duration of the first cycle study programmes and the full duration does not exceed five years (i.e. 3+2, or 4+1). Graduates receive a diploma and a professional title in accordance with the *Professional and Academic Titles Act*. Since the 2001/02 academic year, students receive a Diploma Supplement with their diploma (Education system, 2014).

The third-cycle programmes are doctoral study programmes. They encompass 180 ECTS and last three years. According to the *Decree on the Introduction and Use of Classification System of*

Education and Training, they are classified at level 8/2. The organized forms of study within a doctoral study programme consist of at least 60 ECTS with 120 ECTS being awarded to individual work on a doctoral dissertation. Upon the completion of a third cycle study programme, students are awarded a diploma with their official scientific title Doctor of Science. Along with the diploma, students also receive a Diploma Supplement in Slovenian and in one of the official languages of the EU (Education system, 2014).

Universities, faculties and art academies may provide study programmes of all cycles. Higher vocational colleges provide, as a rule, the first cycle programmes (undergraduate); if they meet special stipulations, they may provide the second cycle programmes (graduate) as well (Higher education Slovenia, 2014).

The studies in Slovenia are either full-time or part-time. The academic year begins on October 1 and ends on September 30. The academic year usually has two semesters of 15 working weeks each, and three periods of examination. The language of instruction is Slovene. Under conditions stipulated by the law and relevant higher education Statutes, higher education institutions may deliver a specific study programme (or part of it) in a foreign language as well (Higher education Slovenia, 2014).

To assure the quality of higher education institutions and study programmes, both internal and external evaluations are conducted. Since 2010, the accreditation of higher education institutions and study programmes is the responsibility of *Slovenian Quality Assurance Agency for Higher Education* (SQAA). The internal evaluation remains the responsibility of higher education institutions (Higher education Slovenia, 2014).

The *Organization and Financing Education Act* and the *Rules on Norms for Financing Higher Vocational Colleges* regulate the financing of higher vocational colleges that provide short-cycle higher education. Public higher vocational colleges and private higher vocational colleges which hold a concession may not charge fees to full-time students. Fees may only be charged for programmes which are not financed by public sources and for part-time studies. Private vocational colleges which are financed by private funds (i.e. fees) have the status of private institutions. Higher vocational colleges which are financed by school fees provide only part-time studies (Financing higher education, 2014).

The *Higher Education Act* broadly specifies financing of higher education institutions. It stipulates that higher education institutions may draw on funds from different sources, including the budget of the Republic of Slovenia, student fees and other contributions, sales of services, donations, inheritances, gifts, etc. The national budget finances those higher education institutions that have been established by the government and those that hold a concession. Financing of public universities and autonomous higher education institutions from the state budget has been regulated since 2011 by the *Decree on Public Financing of Higher Education and Other Institutions*. Public higher education institutions and private higher education institutions which hold a concession may not charge fees to citizens of the Republic of Slovenia or citizens of other EU Member States for studies in accredited full-time study programmes. Higher education institutions can charge fees for part-time studies and programmes that are not financed by public sources (Financing higher education, 2014).

Since 1993, when the *Higher Education Act* was passed, private higher education institutions may provide higher education programmes. The Higher Education Act specifies their establishment and operations. Study programmes have to be accredited. In the same way as for

public higher institutions, the internal and external evaluations take place, and the same rules apply to students and teaching (Financing higher education, 2014).

In accordance with the *Higher Education Act*, the national budget can be used for the co-founding of doctoral studies. In the 2010/11 academic year, the *Decree on the Co-funding of Doctoral Studies* entered into force. The co-funding of doctoral studies is also implemented through young researcher plans, managed by the competent agency (Financing higher education, 2014).

Since 2012, short-cycle higher vocational education and higher education have been under the responsibility of the *Ministry of Education, Science and Sport* (Higher education Slovenia, 2014). Slovenian government plays several roles in the management of public education institutions: it is the regulator, the founder, the main finance contributor and the supervisor. In education institutions that are established by municipalities, the government plays a regulatory and supervisory role and asserts its authority by providing funding for salaries and by subsidizing municipality budgets. As public education institutions do not own property but only manage properties on behalf of their founder, investments and development are also the founder's responsibility. The government and the municipalities (with the financial support from the government) function as developers and investors (Organization of education, 2014).

The *Directorate for Higher Education and Science* is responsible for the planning, directing and funding of higher education activities, student dormitories and higher education libraries. Additionally, it is involved in the development of the higher education information system. It also analyses and evaluates funding, and is the second level authority to deal with complaints relating to the exercising of rights to grants from the *Public Foundation for the Development of Staff and Grants* and places in dormitories. It includes a department responsible for the recognition and assessment of academic certificates from abroad and the Enic/Naric Centre (Governance central level, 2014).

The *Ministry of Education, Science and Sport* involves the following government consulting bodies in the implementation of educational policies and drafting of national regulations and national programmes: the Council for H*igher Education, the Council of RS for Science and Technology*, and the *Council for Student Issues* (Governance central level, 2014).

The socio-economic status of students is in the domain of the Ministry of *Family, Labour, Social Affairs and Equal Opportunities*. This Ministry also covers scholarship policies (it is the founding body of the *Public Foundation for the Development of Staff and Scholarships*) and the care of families and disabled persons (including student families and families of disabled students). Additionally, it is responsible for the national occupational qualification acquisition system, which is a system of assessing and confirming occupational qualifications, skills and experiences acquired outside the formal higher education system. This Ministry is the contact point for mutual recognition of occupational qualifications for citizens of the EU Member States, the European Economic Area and the Swiss Confederation for regulated occupations and activities in the Republic of Slovenia (Governance central level, 2014).

Admission procedures for the enrolment in the study programmes are conducted by *the Higher Education Admission Information Service* and by independent higher education institutions (Governance central level, 2014).

Local communities have no direct authority in the management of higher education institutions. Even though Slovenia is not at present formally organized into regions, regional development agencies have been established in all statistically defined regions in order to promote regional development. They are responsible, among other things, for organizing education for the needs of the region, for drafting feasibility studies for the establishment of private tertiary education institutions, and for facilitating the relationships of universities and other tertiary institutions with the respective regional business community. Together with municipalities and business entities in the region, they play an important role in creating uniform regional scholarship schemes (Governance local level, 2014).

Higher vocational colleges and higher education institutions generally function separately. Higher vocational colleges provide higher vocational education. Public colleges are established by the state, while domestic or non-domestic legal entities or natural persons may establish private colleges. Public higher vocational colleges may be either separate entities or organizational units of larger educational centres encompassing upper secondary schools or intercompany education centres. The latter enables a closer connection with companies, thereby providing future employment for graduates (Types of institutions, 2014). The types of higher education institutions that organize higher education studies include universities, faculties, academies of arts and higher professional colleges. Higher education institutions are divided according to their founder into public (i.e. founded by the state) and private (i.e. founded by domestic or non-domestic legal entities or natural persons). All public and private higher education institutions must be accredited by the *Slovenian Quality Assurance Agency for Higher Education* (NAKVIS) and entered in the *Register of higher education institutions*. This is a prerequisite which a higher education institution must meet in order to carry out its activities and to issue formal degrees (Types of institutions, 2014). According to the most recent data (June 2016), there are four universities (University of Ljubljana, University of Maribor, University of Primorska and University of Nova Gorica), a public independent institution of higher education (Faculty of Information Studies Novo mesto), one International Association of universities (EMUNI-EURO Mediterranean University), and 44 private higher education institutions in Slovenia (Higher education system, 2016).

5.3. Characteristics of higher education in Slovenia

Every year for the last few years, the number of students in tertiary education has been decreasing significantly in Slovenia. In the 2014/15 academic year, 83,699 students were enrolled in tertiary education (see Table 2), which is 7,000 less than a year before and more than 31,000 less than in the 2009/10 academic year (SURS, 2015). In the 2015/16 academic year, 80,000 students were enrolled in tertiary education, which is still showing a declining trend in the number of students (SURS, 2016). The number of short cycle higher vocational education students decreased by almost 2,000 to 11,485 students in the 2014/15 academic year. The number of students in higher professional and university study programmes to obtain their first higher education diploma also dropped from more than 84,000 in the 2009/10 academic year to 52,376 in the 2014/15 academic year. In postgraduate higher education study programmes, the number of students has increased – students were mostly enrolled in master's studies (after having previously gained the first degree). There were nearly 20,000 postgraduate students in the 2014/15 academic year, representing a quarter of all tertiary education students (SURS, 2015). However, in the 2015/16 academic year the number of students decreased to 19,512 (SURS, 2015). In the 2014/15 academic year, only 500 students were still enrolled in the pre-Bologna reform study programmes. These were mostly candidates for graduation in previous higher academic study programmes or students in the final year of medical studies (SURS, 2015).

Tertiary education attainment in Slovenia is 41% and is above the EU average (37.9% in 2014) (Monitor Slovenia, 2015). In the 2014/15 academic year, 48% of young people in Slovenia aged 19–24 years were enrolled in tertiary education; however, their number decreased by 12,496 in the last five years. Although the generations are smaller in number, the proportion of young people in tertiary education is decreasing faster. In the last five years, it decreased by 1.33 percentage points. Although the number of students is rapidly falling, we cannot say the same for the interest of young people to study. There are fewer new entrants (students enrolled in the first grade of higher education for the first time); however, the decrease is not as dramatic as the decrease in the number of students in general. In the 2014/15 academic year, there were 14,000 new entrants, which is 3,500 fewer than five years ago (SURS, 2015).

	Total	Full-time students	Part-time students
Total (1+2)	**83,699**	**67,944**	**15,755**
1. Higher vocational	**11,485**	**6,897**	**4,588**
2. Higher	**72,214**	**61,047**	**11,167**
2.1 Academic and professional higher (former)	499	491	8
2.2 Professional higher (1st Bologna cycle)	20,222	14,194	6,028
2.3 Academic higher (1st Bologna cycle)	26,951	25,484	1,467
2.4 Master (2nd Bologna cycle) – uniform master	4,704	4,628	76
2.5 Master (2nd Bologna cycle) – following 1st Bologna cycle	17,194	15,543	1,651
2.6 Doctorate of science (3rd Bologna cycle)	2,644	707	1,937

Table 5.2. Students enrolled in tertiary education in the 2014/15 academic year in Slovenia. Source: SURS (2015)

With each academic year, the proportion of part-time students among all tertiary education students decreases. In the 2014/15 academic year, 60% of all short cycle higher vocational students were full-time students and the same is true for the 2015/16 academic year (SURS, 2015; SURS, 2016). Ten years ago (i.e. in 2004/05), their proportion was 32%. As regards higher undergraduate students, the proportion of full-time students was already high ten years ago (72%) and was even higher in the 2014/15 academic year (85%). On the other hand, full-time students were still in the minority (20%) among postgraduate students a few years ago (i.e., in 2009/10), yet their share has increased strongly since then and it reached 82% in the 2014/15 academic year. This is probably a result of a rapidly increasing number of master's (2nd Bologna cycle) students where full-time students strongly prevail (SURS, 2015).

There are two basic distinctions in terms of gender inequality in tertiary education. These are horizontal and vertical separations. Vertical separation is the issue of a common concern as there are fewer men in tertiary education than women. In the last five years, the proportion of young men has been on average 40% and the proportion of young women has been on average 60%; according to the data for the 2014/15 academic year, the proportion of women decreased by 6.6 percentage points (from 63% to 56%) (SURS Population, 2015).

Slovenia, as well as many other countries, records horizontal separation – women and men actually choose different fields of study. In the 2014/15 academic year, 32% of all male students and 8% of all female students studied 'Engineering, Manufacturing and Construction'. In the field of 'Science, Mathematics and Computing' the situation was similar (15% of all male and

8% of all female students). On the other hand, in the 2014/15 academic year, the enrolment of women in the field of 'Educational Sciences and Teacher Education' was 14% and of men 2%, and in the field of 'Health and Welfare' the proportions were 13% of women and 6% of men. The most equal fields in terms of gender were 'Agriculture, Forestry, Fisheries and Veterinary' with 4% and 'Services' with 10% for both genders (SURS Population, 2015). Figure 2 presents the most recent data on fields of education and gender for the 2015/16 academic year indicating similar structure as in the 2014/15 academic year (SURS, 2016).

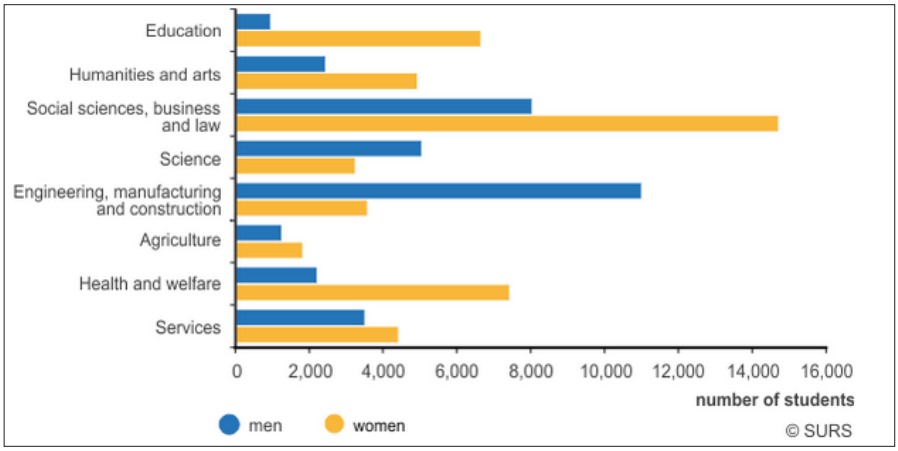

Fig. 5.2. Students in tertiary education by fields of education (KLASIUS-P) and by gender in the 2015/16 academic year. Source: SURS (2015).

The proportion of tertiary educated population is rising. Based on 2011 data, Slovenia has achieved an above-average growth of tertiary educated population in comparison to the OECD countries. The difference between the generations of 25-34-year-olds and 55-64-year-olds with tertiary degree in Slovenia was 18.22 percentage points; in the OECD countries, it was 15.01 percentage points. However, the overall educational level of both younger and older populations remains under the OECD average level. In 2010, the European Development Strategy has set a goal to raise the level of tertiary educated population of 30-34-year-olds to 40% by 2020. From 2010 on, the share of tertiary educated people has been constantly growing and it reached 38% in 2014; Slovenia exceeded the goal in 2014 by 1 percentage point (SURS Population, 2015).

However, the OECD report on Slovenia (OECD, 2014) clearly states that in order to tackle the drop in youth employment rate several measures are needed in Slovenia; among these measures a great importance is attached to the realistic vocational guidance and further reduction of lengthy tertiary education in the fields with poor labour market prospects. There are signals of mismatches between "the output of the higher education system and the needs of the labour market, with gaps in engineering and science" (OECD, 2014, p. 9). According to the OECD report, there are also regional mismatches while some regions face a shortage of high-skilled workers. Some regions display a high-skills equilibrium while others have problems due to the low-skills equilibrium (i.e. regions characterized by low-skilled jobs for low-skilled workers). Since tertiary education is a crucial factor for improving innovation and prosperity of national economy, special attention should be devoted to skill supply as well as to skill demand. Special concern needs to be paid to the skills that are required by employers, to funding of tertiary education that is below the OECD average, and to the quality assurance system (OECD, 2014).

The results of the Erasmus+ project (Report O2, 2016) clearly identified the area of transversal competences that are needed in the labour market. Entrepreneurship, teamwork, creativity and communicativeness skills were all identified as highly required in the surveyed enterprises.

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6. THE PROBLEM OF COMPETENCES IN THE CONTEXT OF PRACTICAL TEACHING AT THE UNIVERSITY LEVEL IN POLAND

Leszek KIEŁTYKA, Waldemar JĘDRZEJCZYK, Robert KUCĘBA, Edyta KULEJ-DUDEK

6.1. Understanding competences

The term competences can be analyzed in many dimensions and used in different meanings. This is reflected in definitions one can find in the domain literature. For example R.E. Bovatiz (1982) defines competences in the scope of performed work as " a set qualities of a given person, which includes characteristic for the given person elements such as motivation, personality traits, skills, self-esteem connected with functioning within a group and knowledge that the person has acquired and uses". C.J. Constable (1998) treats competences as "ability to use knowledge, experience and skills in order to successfully fulfil managerial roles". According to A. Gick and M. Tarczyńska (1999, p. 45) competences should be perceived as "a combination of various qualities such as: knowledge, experience, skills, mental attitude, way of behaviour. These qualities make it possible to achieve appointed goals and carry out tasks in the enterprise efficiently". In the opinion of T. Oleksyn (2006, p. 25) competences are "knowledge, experience and practical skills, internal motivation, talents and predispositions, health and condition, other psychophysical qualities relevant from the point of view of work processes, attitudes and behaviours expected at the workplace and formal authorizations to act". And so a few more definitions can be distinguished, expressed by various domain researchers.

The conducted analyses of the term competences, found in the domain literature, give us the basis to formulate the following conclusion:

1. The term *competences* is most frequently defined as a combination of knowledge, experience and skills of employees together with possessed mental abilities and adopted attitudes, which are directed at effective implementation of the strategic goals of the enterprise;
2. More and more researchers express the opinion that defining competences as knowledge, skills and abilities is not sufficient, as this is too narrow grasp to define competences properly. Apart from these elements, they also indicate a vital importance of other elements, such as for example: beliefs of employees, styles of actions, ambitions and other personality traits. Such an understanding of competences makes them more similar to the notion of human capital;
3. Presently - the widest grasp - competences are recognized to be all predispositions, which enable carrying out professional goals at a proper level.

6.2. Categories of competences

There are numerous approaches to identifying competences. Usually they are divided into the two basic groups: professional competences and personal competences (Armstrong, 2004, p.252). Professional competences are defined with reference to a particular work position. They are directly associated with performed tasks, e.g. technical skills, knowledge of the given industry. Professional competences development is a result of gained experience in the course of work. They can also be improved with the use of formal methods, e.g. courses, trainings, workshops. Personal competences in turn are associated with personal qualities, which employees incorporate into the fulfilled professional roles. They pertain to behaviours, therefore they are often called behavioural competences. Personal competences development is much more difficult than professional ones. They usually require a change of behaviours.

In the economic practice both professional and personal competences are important. Professional competences of managerial staff enable, among others, product development, implementing new solutions, building authority. The following concepts are connected with personal competences: leadership, motivating, building team relationships. It can be stated that requirements as to professional competences, from the perspective of few last decades, have not changed much. However, personal competences are becoming more and more important as thanks to them it is possible to achieve enterprise goals, using both the potential of an individual and synergy of the team.

In the domain literature one can find the whole set of other criteria of competence grouping. For example F. Delamare le Deist and J. Winterton divide competences into the four categories (2005, p. 40):

1. Cognitive ones – the ability to learn, understand and memorize, combined with openness curiosity and exploring passion;
2. Functional ones - abilities that make possible doing a particular job or work at given workplace efficiently;
3. Social ones - they concern relations with people;
4. Metacompetences - abilities to learn and think critically combined with the ability to cope in the conditions of risk and uncertainty.

None of the competences grouping conceptions is dominant in relation to the others. Choice of the competence model in the enterprise is a subjective process. The most important issue is to adjust the adopted competence model to a given enterprise specificity.

Regardless of the competence grouping criteria and category type it is not possible to define one so called "model" set of key competences for particular categories. A part of expected competences may be identical for the whole of entities, and a part of them may be completely different, e.g. a set of managerial competences is not identical for all managers. Different key competences should characterize , e.g. staff and line managers, operating in hierarchical and matrix structures, production department, HR, finances, etc. (Oleksyn, 2006, p. 22). The most frequently distinguished competences, on the lists developed by various domain experts include:

- knowledge,
- experience and skills,
- creativity and innovativeness,
- independence,
- responsibility,
- entrepreneurship,
- business orientation,
- professionalism,
- decision-making,
- efficiency,
- communicativeness,
- ability to cooperate,
- ethical behaviour,
- intelligence,
- personal culture and work culture,
- assertiveness.

6.3. Managing competences

Managing competences in organizations has become a necessity. Both, strong and weak points of the organization are the results of operations, effectiveness of which depends largely on human resources potential (Harrison, St. John, 1994, p. 100). The definition of competences means operations, which lead to an increase in human capital value and growth of organization operations effectiveness. Managing competences comprises such processes as: "defining competence standards, planning and organizing activities connected with shaping competences in the organization, inspiring and motivating people to professional development and taking new or wider organizational roles, and also controlling the course of processes connected with these issues (Oleksyn, 2001, p. 225). A system approach is advised in order to achieve it. This approach means such a way of conducting personal policy in the organization, where the problem of competences becomes an essential element integrating various activities in the scope of human resources management. An advantage of developing and implementing a system of competence management in organizations is perceiving people through the prism of their abilities, skills, knowledge, personalities and attitudes. Employees are treated as a vital element, which largely determines the condition of the organization. Additionally, the system approach indicates a business nature of human resources management. It enables developing the basis of employee improvement planning. A sample model of a system of competence management has been presented in figue 6.1.

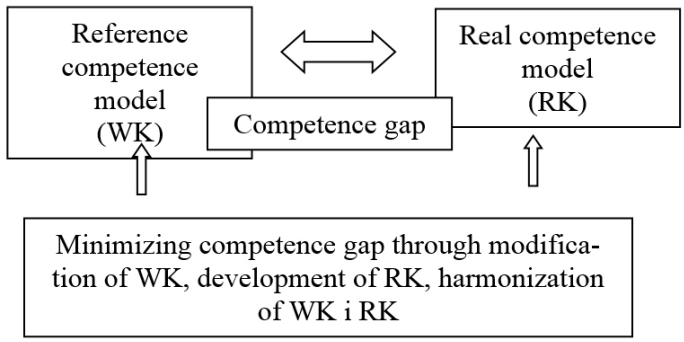

Figure 6.1. Model of a competence management system. Source: (Pocztowski, Miś, 2000, p. 71).

The presented model shows that only developing and implementing a competence model in the organization is not enough to recognize the competence management process a system one. It is also necessary to analyze the strategic competence gap. Conducting such an analysis makes it possible to identify lacks in key competences of employees and taking proper steps in order to eliminate or limit them.

Competences in the organization are managed by the same subjects that manage human resources. In the system approach the process of competence management requires that all subjects are involved in it. No subject has full rights in the scope of competence management. The strategy and shape of the system of competence management is decided by the top management.

Managing through competences is a management concept that is difficult to implement in practice, among others, because of the complexity of the competence problem and long-term period of building the system.

6.4. Creating a competence management system

A competence management system in the enterprise should be created in stages. The basic stages are as follows (Oleksyn, 2006, s. 186; Rostkowski, 2004, p. 62-63):

1. Identifying the areas of strategic importance form the point of view of enterprise competitiveness;
2. Defining competences;
3. Building competence profiles;
4. Combining the profiles into the one coherent system;
5. Developing tools, questionnaires, procedures, rules, etc., of particular sub-systems of human resources management, according to the adopted competence management concept;
6. Analyzing the competence gap;
7. Motivating the staff to acquire and develop necessary competences.

The following procedure can be applied while preparing the definition of competences [Rostkowski, 2004, p. 45-47]:

1. Formulating the name of a competence,
2. Creating a general definition of a competence,
3. Specifying the definition of a competence,
4. Defining levels of competence fulfillment,
5. Giving examples of negative behaviours, showing the ones, which will not be tolerated in the enterprise.

Mistakes which are most frequently made at this stage include creating very general definitions of competences and ambiguously determined levels of competence fulfillment (Sidor-Rządkowska, 2006, p. 104).

Defined competences constitute an enterprise competence model (Whiddett, Hollyforde, 2003, p. 22). Creating too long lists of competences should be avoided. In practice, in the process of selecting candidates or in the process of employee evaluation, it is possible to verify only several dozens of competences.

Having defined the set of competences vital for a given organization, competence profiles should be determined for particular employee positions/group of positions. A competence profile is a set of required most important competences that employees possess or are necessary for a given position, accompanied by the defined level of their fulfillment. Each competence profile should include the following elements [Rostkowski, 2004, p. 58]:

- „a list of competences included in the competence profile;
- information on the importance of particular competences for the whole model,
- information on the desired or existing level of each competence fulfillment;
- ways of measuring competences".

A good practice is creating competence profiles for groups of homogeneous positions. In this way the number of competences is limited to several synthetic ones. This stage is particularly exposed to risk of making a mistake, which result from lack of precise guidance that guarantees developing optimum competence models. The most frequently made mistakes at this

stage include: wrong identification of competences required for a given position, defining too few or too many competences (Sidor-Rządkowska, 2006, p. 104).

Defined competences should be described at several acquisition levels - ranging from lack of competences to the level of outstanding individuals. Properly created competence scales make it easier to determine the acquisition level of a given competence by employees. Various approaches are applied in order to create them. The simplest one consists in the use of unified point scales, on the basis of which the fulfillment level of particular criteria is evaluated. A sample scale may look as follows (Oleksyn, 2006, p. 34):

Level 0 – definitely below the requirements for the position,
Level 1 – minimum standards and expectations are fulfilled,
Level 2 – at the level of requirements for the position,
Level 3 – high standards of requirements for the position are fulfilled,
Level 4 – above the requirements for the position.

The following tools tend to be used in order to diagnose competences in the organizations: position profiles, periodical evaluation sheets, work positions description cards and work evaluation cards. Occasionally the following tests are used: competence tests, ability tests, behaviour tests, predispositions test or psychological tests. They are usually used as selection tools in recruitment processes, mainly the ones for key positions.

Implementing a competence system in the organization does not mean introducing substantial changes in the management system. Modifications concern only chosen elements of the management system, mainly: recruitment and selection processes, adapting new employees, employee periodical evaluation, training and coaching programmes. Their role is to integrate personal tools around competences.

6.5.Improving competences in organizations

Competences can be acquired and improved by means of different methods. Basically, ways of improving employee competences in organizations can be divided into the two groups:

1) Trainings, which take place outside the workplace, so called off-the-job trainings.
2) Trainings, which take place at the workplace, so called on-the-job trainings.

Three basic sources of competence improvement are most frequently distinguished with reference to the indicated ways of competence improvement:

- formal ways of improvement (studies, postgraduate courses, MBA studies, trainings, workshops),
- experience gained in the course of work,
- information and advice acquired from other members of organization.

This process should be supported by the given organization. The most frequently applied methods of competence improvement, where the employing organization can play an active role include (Uniwersalny model ..., p. 47-48):

- learning at the workplace,
- exchanging experiences with co-workers,

- coaching or mentoring,
- short courses,
- trainings, workshops,
- comprehensive improvement forms (training cycles, studies),
- domain literature, bulletins and specialist magazines,
- regulations, procedures and resolutions.

Knowledge in the distinguished competence improvement methods can be transferred by means of different teaching methods and techniques. The most frequently used ones include (Jędrzejczyk, 2013, p. 125):

- a lecture combined with a multimedia presentation,
- case study analysis,
- moderated discussion,
- practical exercises that instigate creativity and creative thinking,
- practical exercises based on real professional tasks of training participants,
- exercises recorded with a digital camera,
- brainstorming,
- working in action teams,
- workshops,
- team simulations,
- psychometric tests,
- individual consultations in the scope of discussed issues.

The domain literature as well as training and counseling practice also provide a number of other methods of competence improvement. For example, competence improvement methodologies, in particular so called soft ones, can be divided into the three main methods (Które metody ...):

1. Educational (lecturing),
2. Training, and
3. Coaching.

Educational method (lecturing) consists in passing information on the given competence to the audience as well as presenting the possibility of its development and inspire the participants to acquire or improve it. In this method participation in meeting is required (in the form of courses, trainings, e-learning classes), during which particular competences are discussed and presented. In this way the participants become aware of what possessing a given competence means. When the goal of teaching is to shape new competencies this method is not effective. Usually, it is applied in the teaching process to introduce the issue and the training method is used, which enables development of new habits and skills.

The training method consists in active practising of skills in a specially designed training room. The training allows for free experiments with particular behaviours. It supports both learning new skills and improving the already possessed ones. The limitation of this method is so called skill transfer problem - it is not certain that effective functioning in the training room will be reflected in equally effective operation in the professional practice.

The coaching method is helpful first of all in improving soft competences. Its aim is to provide after-training support at the stage of implementing skills acquired in the course of training in real professional situations.

6.6. Teaching methods applied at universities in the context of transversal competences improvement - Polish experiences

A particularly important role in the process of improving competences useful in professional work plays university education. Knowledge, abilities and skills acquired in the course of studies constitute a fundamental basis for work and professional career. The teaching methods applied in the process contribute to it. In order to study the problem the authors analyzed teaching methods used at universities in the context of transversal competences improvement. The analyzed methods are used in formal, non-formal and informal education. Results of the analysis based on experiences of Polish universities have been presented in Table 6.1.

Practical teaching method	Formal teaching	Non-formal teaching	Informal teaching
Problem-based methods			
brainstorming	X	X	X
observation	X		X
panel discussion	X	X	X
problem-based lecture	X	X	X
metaplan	X		
organizational drama			
managerial training	X	X	
business stories	X	X	X
case study	X	X	X
Activating methods			
case study	X	X	X
staging	X		
organizational drama			
managerial training	X	X	
business stories	X	X	X
six thinking hats by Edward de Bono			
Expository methods			
demonstration	X	X	X
psychodrama	X		
organizational drama			
managerial training	X	X	
business stories	X	X	X
simulating didactic games	X	X	
Programmed methods			
using computers	X	X	X
using course books	X		X
using e-learning tools	X	X	X
using mobile applications	X		X

Practical teaching method	Formal teaching	Non-formal teaching	Informal teaching
Practical methods			
subject classes	X		
laboratory classes	X		
production classes	X		
project method	X		
seminar	X	X	X
simulation	X	X	
organizational drama			
managerial training	X	X	
business stories	X	X	X
webinars		X	
Other			
group work	X	X	

Table 6.1 Teaching methods applied at universities in Poland. Source: own elaboration based of the analysis of syllabuses in technical courses in selected universities in Poland.

Due to the importance and size of the issue, the results of the conducted analysis have been described in detail in the next chapter of the present monograph.

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7. APLICATION OF PRACTICAL TECHING METHODS AT THE LEVEL OF FORMAL, NON-FORMAL AND INFORMAL EDUCATION

Leszek KIEŁTYKA, Waldemar JĘDRZEJCZYK, Robert KUCĘBA, Edyta KULEJ-DUDEK

7.1. Introduction

The present chapter is an empirical continuation of the previous chapter called "*Problem Domain of Competences in the Context of Practical Education at the Higher Education Level in Poland*". It includes practical teaching methods applied at Polish universities.

On the basis of syllabuses of subjects used in technical courses of practical profile in the selected Polish university (the Polish partner university in the project), the Authors have defined percentage indexes of shares of distinguished practical teaching methods the formal level. Practical teaching methods in non-formal and informal education have been aggregated in the chapter as well.In higher education teaching students, listeners - takes place at three complementary to one another levels: formal, non-formal and informal (Poczmańska A., Saryusz-Wolski T., Stęchły, Tauber M., Ziewiec-Skokowska G, 2015, p.21-23).

Formal education at Polish universities (public, private and social ones) is a formalized institutional form implemented in accordance with programmes that enable acquiring qualifications: knowledge, skills and competences (European Commission, 2002, p. 31-32), (Sidor-Rządkowska, 2006) recognized within the legal system as well as on the labour market. Various practical teaching methods are used in formal education processes, which make it easier to acquire knowledge and particular skills and use them in professional practice. Non-formal education in turn at Polish universities is a formal institutional form, alike formal one. However, it is implemented outside programmes that make it possible to acquire qualifications recognized within the legal system. The third level of education at Polish universities - informal education is the one which operates outside the formal teaching system. Usually, it is of non-institutional, sometimes non-system nature. In this form of education non-formal, horizontal relations among students are most commonly present. Informal education is a domain of free choice, unlike the traditional obligatory school system.

7.2. Formal teaching methods used at universities

The portfolio of practical teaching methods in formal education includes: problem-based methods, activating methods, expository methods, programmed methods and practical ones. The method which is also often used in formal education is group work - in formalized student teams.

In the group of problem-based methods the following ones are applied: brainstorming, observation, panel discussion, problem-based lectures, metaplan, managerial training, business stories and case study. The selection of these methods is justified, as they develop the ability of creative thinking - this concerns in particular brainstorming and panel discussions. Problem-based methods enable students to present problem situations (e.g. problem lecture) as well as organize their cognitive process, e.g., through observation, case study, presenting "good practices", business stories or managerial training. Applying problem-based methods in formal practical education enhances cognitive processes through analysis, explanation, evaluation, comparison and concluding. Applying these methods enables shaping practical competences

adjusted to portraying business reality and professional work conditions (e.g. through creating metaplans) (Rostkowski, 2004), (Oleksyn, 2006).

In the group of activating methods used in formal practical education in Poland we can distinguish: case study, staging, managerial training and business stories. The scope of activating methods in formal education is vital as it boosts active participation of students in formalized didactic activities, limiting at the same time the role of the lecturer to the one of a moderator, consultant as well as a reviewer or critic. Activating methods applied in the Polish system of practical education enable verifying the level of knowledge acquired by students and defined by domain their skills and attitudes (Jędrzejczyk, 2013, s. 125).

The portfolio of practical teaching methods in formal education also includes exposing methods, such as: demonstration, psychodrama, managerial training, business stories and didactic simulations. These methods also enable portraying business reality and perspective professional practice in particular, concentrating audiences on exposition or simulation of particular values and behaviours. Presently in formal education processes, particularly in the practical one, e-learning tools, including webinars, are commonly used. The most commonly used e-learning environment is MOODLE. In teaching at the formal level practical education is conducted in the form of: subject classes, laboratory classes, project method or seminar. Webinars, which were mentioned above, are at the stage of introduction in the system grasp of Polish higher education.

In the research process on the basis of analysis of technical courses syllabuses, at the selected university in Poland (Polish partner university in the project), the authors defined percentage indexes of shares of practical education methods in formal teaching with reference to distinguished basic activities, such as: subject classes, laboratory classes, the project method and the seminar. The defined indexes have been aggregated in table 7.1.

In case of subject classes, which in formal teaching constitute 57,53% with reference to all summarized types of activities (practical methods), the most popular teaching method is case study - 61,90%. High values of indexes with reference to all teaching methods applied in subject classes were obtained for the following methods: panel discussion - 36,90% and problem lecture - 30,95%. Still referring to programmed methods, the one using a coursebook are still more popular - 29,76%, than the methods with the use of the computer - 28,57%. Presently this difference amounts only 1,19%. Practical teaching methods applied in subject classes, which obtained below 10% are currently at the stage of growth. It is expected that their share will grow, this concerns in particular: metaplan, managerial training or the use of mobile applications and the ones dedicated for cloud computing (Kiełtyka L., Jędrzejczyk W., Kucęba R, 2011).

			Problem-based methods		Activating methods		Expository methods		Programmed methods	
	Name	%	Name	%	Name	%	Name	%	Name	%
Practical methods	Subject classes	57,53%	brainstorming observation panel discussion problem-based lecture metaplan	4,76% 1,19% 36,90% 30,95% 2,38%	case study staging managerial training business stories six thinking hats	61,90% 2,38% 1,19% - -	demonstration psychodrama organizational drama simulation games	21,42% 2,38% - 5,95%	using computers using coursebooks using e-learning tools using mobile applications	28,57% 29,76% 7,14% 2,38%
	Laboratory classes	15,76%	brainstorming obervation panel discussion problem-based lecture metaplan	4,34% 4,34% 4,34% 4,34% -	case study staging managerial training business stories six thinking hats	26,08% 4,34% - - -	demonstration psychodrama organizational drama simulation games	43,47% - - 13,04%	using computers using coursebooks using e-learning tools using mobile applications	86,95% - - 4,34%
	Production classes	*	brainstorming observation panel discussion problem-based lecture metaplan	*	case study staging managerial training business stories six thinking hats	*	demonstration psychodrama organizational drama simulation games	*	using computers using coursebooks using e-learning tools using mobile applications	*
	Project method	23,28%	brainstorming observation panel discussion problem-based lecture metaplan	14,70% - 29,41% 11,76% 47,05%	case study staging managerial training business stories six thinking hats	58,82% - - 2,94% -	demonstration psychodrama organizational drama simulation games	11,76% - - 5,88%	using computers using coursebooks using e-learning tools using mobile applications	55,88% - 5,88% 2,94%
	Seminar	3,43%	brainstorming observation panel discussion problem-based lecture metaplan	- - 80% 80% 80%	case study staging managerial training business stories six thinking hats	80,00% - - - -	demonstration psychodrama organizational drama simulation games	20,00% - - -	using computers using coursebooks using e-learning tools using mobile applications	- - - -

Table 7.1. Share of applied practical teaching methods in formal education

Source: Own study on the basis The Project The acceleration method of development of transversal competences in the students' practical training process: The report concerning applied teaching methods of transversal skills and methods of practical trainings. Poznań, 2016r.

The sum of 100% excluding production classes

* Production classes – 4-week traineeships carried out twice during the studies. Applied methods: panel discussion, problem-based lecture, case study, observation, demonstration, business stories, group work, using computers

Laboratory courses in technical courses (at the researched Polish university) constitute 15,76%, with reference to all summarized types of activities (practical methods - excluding production classes, traineeships). The method of practical teaching which is presently most commonly used in formal education is the programmed method - computer use, which constitutes 86,95%. Computers with specialized subject software are the basis of the laboratory equipment, which reflects the real conditions of traineeship. Expository and activating methods are also commonly used in laboratory classes. They include in particular demonstration - 43,47% and case study - 26,08%. Presently, in formal practical teaching, one can notice a dynamic growth of applying in laboratory classes with students simulation games - 13,04%. This concerns particularly MMOG games (massively multiplayer online game) - Internet simulation games played by many players online. As a supplement of the abovementioned methods of practical teaching laboratory classes also make use of methods such as: brainstorming, observation, panel discussion, problem-based lecture, staging as well as mobile applications - unit share of which amounts 4, 34%.

Another group of evaluated practical methods constitute project methods. Their share with reference to all summarized types of activities (practical methods - excluding production classes, traineeships), constitute 23,28%. In case of project methods applied in formal practical teaching, case study is often used - 58,82%, as a representation of business reality and future professional practice of students. Project methods are frequently carried implemented with the use of computers - 55,88%, in this e-learning methods - 5,88%. The groups of applied problem-based activating and expository methods also include: metaplan - 47,05%, panel discussion - 29,41% and problem-based lecture - 11,76%. Project methods also frequently use simulation games - 5,88% and mobile applications. However, their use is currently incidental - it is expected that their use will grow in the future.

The last evaluated practical method is seminar - formulating final knowledge, skills and practical competences (Parliament and the Council of European Union, 2006, p. 1-3) of university graduates. The share of these activities with reference to all summarized types of practical methods (excluding production classes - traineeships) constitutes 3,43%. Problem-based, activating and expository methods are used in formal practical teaching during seminars. Due to the indicated function of seminars in the scope of formal practical education, the following methods are applied in it: panel discussion, problem-based lecture, metaplan. Unit share of these methods application during seminars amount 80%.

A specific form of education in practical teaching are production classes. They are conducted in the form of 4-week traineeships taking place twice in the course of the studies. Traineeships are conducted in enterprises, whose production and service profile is coherent with the practical teaching profile of students. In the group of practical teaching methods in formal education, in the course of traineeships (production classes) we can distinguish: panel discussion, problem-based lecture, case study, observation, demonstration, business stories, groupwork and working with computers (The Project..., 2016r.).

7.3. Non-formal teaching methods applied at universities

The portfolio of practical teaching methods used in non-formal education is similar to the one used in formal teaching. Non-formal teaching uses in a similar extent problem-based methods, activating methods, expository methods, programmed methods and practical methods. In the group of problem-based methods the ones distinguished in formal teaching are used, excluding observation and metaplan. In the group of activating methods - the ones distinguished in-

formal teaching, excluding staging. In the group of expository methods in turn - the ones distinguished in formal teaching, excluding psychodrama. The group of programmed methods uses the ones distinguished in formal teaching, excluding the use of coursebooks and mobile applications. The method which is frequently used in non-formal teaching, just as in case of formal teaching, is groupwork. In Table 7.2 the authors aggregated practical teaching methods applied in non-formal teaching at the selected Polish university (the partner university in the project) in technical courses.

According to Table 7.2, two basic forms of teaching are applied in non-formal education processes, namely trainings and courses. However, in the professional terminology these two terms are not synonyms. In the legislative and specialist language courses are defined as improving skills, which is connected with presently performed work and particular post. A course in turn, does not have to refer to currently occupied post. It can improve possessed or teach the basics of assumed skills. However, there are no significant differences between a training and a course as to the manner in which knowledge is passed. The set of practical teaching methods used in trainings is almost the same as the set used during courses. Both forms of teaching frequently make use of practical teaching methods, such as: brainstorming, panel discussion, problem-based lecture, case study, business stories, demonstration, methods using the computer and the ones using e-learning tools. Simulation games and managerial training are also used during trainings. Some of the courses and trainings are conducted in the form of webinars.

In the non-formal teaching processes the stress is put both on teaching theory and practice, which is reflected in the set of applied teaching methods (The Project..., 2016r.).

7.4. Informal teaching methods applied at universities

In informal teaching, similarly to formal and on-formal teaching, practical teaching methods are used, which include: problem-based ones, activating ones, expository ones, programmed ones and practical ones. The portfolio of practical teaching methods in formal teaching is largely limited compared to the portfolio of remaining teaching methods, apart from programmed methods.

In Table 7.3 the authors aggregated practical teaching methods in informal teaching applied in technical courses at the selected university in Poland (the Polish partner university in the project).

The following ones are used in the group of problem-based methods: brainstorming, observation, panel discussion, problem-based lecture, business stories and case study. Business stories and case study are implemented in the group of activating methods. In the group of expository methods in turn, business stories and demonstration are used. Referring to programmed methods applied in informal teaching the following practical teaching methods have been introduced: ones using computers, ones using coursebooks, ones using mobile applications and ones using e-learning tools.

The following basic practical forms are applied in informal teaching processes: scientific groups, student organizations, lectures of representatives of science, politics and business world; projects such as: girls to technical universities, job fairs, conferences, symposiums and excursions (Table 7.3). In majority of informal teaching forms the teaching process takes place with the use of computers.

		Problem-based methods		Activating methods		Expository methods		Programmed methods	
Practical methods	**Courses**	brainstorming	x	case study	x	demonstration	x	using computers	x
		observation	-	staging	-	psychodrama	-	using coursebooks	-
		panel discussion	x	managerial training	-	organizational drama	-	using e-learning tools	x
		problem-based		business stories	x	simulation games	-	using mobile applications	-
		lecture	x	six thinking hats	-				
		meta plan	-						
	Trainings	brainstorming	x	case study	x	demonstration	x	using computers	x
		observation	-	staging	-	psychodrama	-	using coursebooks	-
		panel discussion	x	managerial training	x	organizational drama	-	using e-learning tools	x
		problem-based		business stories	x	simulation games	x	using mobile applications	-
		lecture	x	six thinking hats	-				
		meta plan	-						

Table 7.2. Practical teaching methods in non-formal education. Source: Own study

		Problem-based methods		Activating methods		Expository methods		Programmed methods	
Practical methods	Scientific groups	brainstorming observation panel discussion problem-based lecture meta plan	X - x x -	case study staging managerial training business stories six thinking hats	x - - x -	demonstration psychodrama organizational drama simulation games	x - - -	using computers using coursebooks using e-learning tools using mobile applications	x x - x
	Student organisations	brainstorming observation panel discussion problem-based lecture meta plan	x - x x -	case study staging managerial training business stories six thinking hats	x - - x -	demonstration psychodrama organizational drama simulation games	x - - -	using computers using coursebooks using e-learning tools using mobile applications	x x x x
	Lectures of representatives of the world of science, politics and business	brainstorming observation panel discussion problem-based lecture meta plan	- - - x -	case study staging managerial training business stories six thinking hats	x - - x -	demonstration psychodrama organizational drama simulation games	- - - -	using computers using coursebooks using e-learning tools using mobile applications	x - - -
	Projects: girls to technical universities, job fairs, etc.	brainstorming observation panel discussion problem-based lecture meta plan	- x x - -	case study staging managerial training business stories six thinking hats	- - - - -	demonstration psychodrama organizational drama simulation games	x - - -	using computers using coursebooks using e-learning tools using mobile applications	- - - -
	Conferences, symposiums	brainstorming observation panel discussion problem-based lecture meta plan	- - x x -	case study staging managerial training business stories six thinking hats	x - - x -	demonstration psychodrama organizational drama simulation games	x - - -	using computers using coursebooks using e-learning tools using mobile applications	x - - -
	Excursions	brainstorming observation panel discussion problem-based lecture meta plan	- x x x -	case study staging managerial training business stories six thinking hats	- - - x -	demonstration psychodrama organizational drama simulation games	x - - -	using computers using coursebooks using e-learning tools using mobile applications	- - - -

Table 7.3. Practical teaching methods in informal education. Source: Own study

Scientific groups and student organizations in the informal teaching process are based on the same portfolio of methods. They make the use of such methods as: brainstorming, panel discussion, problem-based lecture, case study, business stories and demonstration. Education involves use of computers, e-learning tools and mobile applications. The smallest portfolio of methods is used in case of lectures of representatives of science, politics and business world. They only include: problem-based lectures, case study and business stories; and in case of specific projects (for example: girls to technical universities, job fairs) - only observations, panel discussion and demonstration. The main effect of informal teaching processes is supposed to be independent learning, both intended and unintended. This is reflected in the set of applied teaching methods - in this process problem-based and activating methods play major role (The Project..., 2016r.).

7.5. Summary

Application of diversified methods of practical teaching methods in the teaching process at formal, non-formal and informal level enables Polish students to compare usefulness of the presented teaching content and developed competences in "professional life" and also in creating and following their "career path".

Diversification of practical teaching methods/forms correlates with acquiring qualifications by students, required knowledge, skills and competences - recognized within the legal system as well as on the labour market (Stankiewicz, 2005).. The measurable effect of such a differentiation is creating entrepreneur attitudes (Whiddett, Hollyforde, 2003, p. 22), developing and promoting the idea of entrepreneurship, comprehensive support in the scope of shaping skills required in professional career, creativity, ability to work in the group and indirectly inspiring ethical behaviours in business practice.

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8. THE CHARACTERISTIC OF THE CHOOSEN METHODS OF TEACHING TRANSVERSAL COMPETNECES IN HIGHER EDUCATION IN POLAND

Beata BUTRYN[2], Małgorzata SOBIŃSKA[3], Zbigniew ANTCZAK[4], Kazimierz PERECHUDA[5]

8.1. The methods used in the teaching of transversal competences, entrepreneurship, communication skills, creativity and team work

8.1.1. Introduction

The considerations in this chapter are developed on the basis of Polish literature and report on teaching methods of transversal skills and methods of practical trainings (The Raport..., 2016, p. 92-104)[6]. Their goal is to present the state prevailing in higher education in Poland regarding ways of training soft skills and to show the direction of changes and challenges that universities confront in this area in the era of globalization, while integration in Europe.

Ministry of Science and Higher Education in accordance with the findings of the Bologna process and in accordance with the recommendations of the European Union acceded with several years of delay to work towards a reform of higher education in Poland. That work resulted in the enactment by the Parliament of the change act Law about Higher Education the Act on scientific degrees and academic titles and degrees and title in art, as well as some other laws, called a short novella law on Higher Education (Wawak 2012, p. 597).

Functioning earlier Regulation of the Minister of Science and Higher Education of 12 July 2007 on education standards for individual fields and levels of education has introduced obligatory educational standards for 118 fields of study at universities, public and private in Poland. This was the start of customizing managerial studies to the requirements of the Bologna process and the recommendations of the European Union. It was also another step towards integration of higher education in Europe with the aim to enable the recognition of professional qualifications and ensuring full vertical and horizontal mobility of students and an increase in mobility of teachers in Europe.

Standards of education lay emphasis mainly on the unifying quantitative indicators, defer regulations on quality problems for the future (Wawak 2012, p. 601).

The amendment of the Law on Higher Education of 18 March 2011 replaced the standards of education based on quantitative indicators implementation of the so-called. National Qualifications Framework, which define the learning outcomes from the side of quality in designated areas of education. On the basis of universities to elaborate the expected learning outcomes in the fields of study, on which they intend to educate students for studies I and II degree adopted the profile of education (general academic and practical).

[2] Author of the chapter 8.1
[3] Author of the chapter 8.1
[4] Author of the chapter 8.2
[5] Author of the chapter 8.3
[6] The report concerning applied teaching methods of transversal skills and methods of practical trainings was prepared in the frame of the Project "The acceleration method of development of transversal competences in the students' practical training process". The project is supported by Erasmus+ Programme of the European Union.

These changes have significantly increased the autonomy program of the higher education and allowed the start author's courses of study with the support of scientific authorities, employers and experts in the field of economy. Key importance in drawing up education programs has a description of the intended learning outcomes for a given field of study, the level and profile of education, which also must:

- be compatible with selected learning outcomes, from which the field of study has been separated ,
- respond to needs of the current and future labor market,
- take into account the international standards,
- be linked to the training modules and assigned them numbers of ECTS points.

Implementation of the National Qualifications Framework is intended to provide comparability of Polish universities diplomas in other European countries (Wawak 2012, pp. 604-605).

As the authors of the report "Diagnosis of higher education" notice, conditions of the new economy pose challenges for universities in terms of the achieved learning outcomes, which must give basis for long-term successful career on the variable labor market, which is associated with the formation of general competencies, such as problem solving and learning, teamwork in project teams, self-organization, etc. These skills can be shaped in both cycles, professionally oriented, in the closer relationship with companies, as well as in the cycles of academic projects based on the principle of a strong integration of education with high quality research. In their opinion, the key challenge for the Polish education in general and higher education in particular is the quality of teaching staff, its research capabilities, especially workshop, methodological and didactic competences; investment in this area is a key challenge for the higher education sector (Diagnosis ...,, 2016, p. 10).

According to previously mentioned "Diagnosis of higher education" in Poland:

- introduction of the National Qualifications Framework created a good basis for the development of a "culture of learning outcomes" and orientation of the education process for students;
- the main determinant of the quality of education processes are competences (learning outcomes) obtained by a person ending studies; they depend on a set of learning outcomes defined for this training programme by the entity conducting studies and the extent to which the person ending the studies achieved the established learning outcomes (dependent - to a large extent – on how a programme of study has been designed and implemented);
- modern, effective learning methods focused on a student are largely based on solving problems or projects (problem / project based learning), which has a close relationship with the concept of research based education,
- competences (knowledge and skills) of academics in modern teaching methods are inadequate and methods of teaching, and particularly methods of verification of learning outcomes obtained by the student, in many cases do not fit the declared objectives and the intended learning outcomes;
- there are none enough strong incentives that would cause an increase in interest of academic teachers in improving the teaching skills and in the introduction of innovation and other ways of improvement in the learning process. The existing system of financing and promotion discourages to taking such actions. There is a need for system's changes resulting in relevant activities at universities and institutions providing education (Diagnosis ..., 2016, p. 15)

In the next part of this chapter the attention will be focused on a detailed analysis of the methods used in the teaching of the so-called transversal competences in higher education in Poland.

8.1.2. Definitions of chosen methods of teaching transversal competences

Among the most commonly used teaching methods supported teaching of soft competencies in Polish higher education are such methods as: problem-solving, activating, demonstrating, programmed, practical.

Problem-solving methods (Rau, Ziętkiewicz, 2000) are the methods which enhance the ability of critical thinking and they consist in presenting to learners a problem and organizing their cognitive process by means of diverse sources of information, e.g. educational films, numerical data, periodicals. Cognitive processes encompass analyzing, explaining, evaluating, comparing and concluding. They include, among others:

– brainstorming,
– observation,
– panel discussion,
– problem-solving method,
– case study.

Activating methods (Rau, Ziętkiewicz, 2000) are group of teaching methods which intensify students' participation in lessons/classes, simultaneously limiting the role of a teacher to the role of a moderator helping to achieve learning aims and evaluate progress. They include, for example:

– case study,
– staging,
1. de Bono's six thinking hats, etc.

Demonstrating methods (Bereźnicki, 2001) are the methods which enable to attain specific values through:

2. shows,
3. psychodramas,
4. educational simulation games, etc.

Programmed methods (Szlosek, 1998), (Bereźnicki, 2001) are the methods which consist in working with a particular tool, which enables learners to acquire knowledge effectively, find out about facts and form an opinion about a given issue. They can be employed using:

– a computer;
– a book.

Practical methods (Petty, 2010), (Bereźnicki, 2001) are the methods which allow to develop skills of effective activity, putting theory into practice and gaining new experience in being active. They include, among others:

– practical classes;
– laboratory classes;
– production classes;
– project method;
– seminar;
– simulation.

Apart from the methods suggested and presented above, source literature contains others, such as: coaching, imitating socially competent models, learning through exploration, reflective learning (Kształcenie, 2015).

The mentioned teaching methods can be used to improve especially four selected competences: entrepreneurship, communicativeness, creativity and teamwork, that would be discussed in detail in the following sections of this chapter.

8.1.3. Teaching the eneterpreneurship in higher education in Poland

As far as the academic teaching content related to entrepreneurship and proposed in education standards in the field of management was concerned, it fully reflected the European Commission recommendations related to the achievement of cognitive and education aims (Wach, 2007, pp. 120-127).

The Ministry of Science and Higher Education placed Entrepreneurship as a subject in the education standards for the field of management in second-cycle studies in the group of curricula. The effect of learning this subject should be to understand the significance of entrepreneurship in management and to develop the ability to formulate and implement entrepreneurial solutions. The proposed teaching content included, among others (Richert-Kaźmierska, 2011):

– the definition of entrepreneurship, types of entrepreneurship and entrepreneurial organizations,
– the presentation of an entrepreneur, his/her desirable qualities and ways of functioning,
– the presentation of infrastructure supporting the development of entrepreneurship.

Students can also acquire knowledge and skills related to entrepreneurship through classes not included in the study programme. Unfortunately, a lot of students do not take advantage of optional extra-curricular classes. Some take the opportunity to attend job fairs, conferences and seminars organized by higher education institutions. They also join student science clubs (Richert-Kaźmierska, 2011).

The reports ordered by the European Commission show that Poland has so far been highly assessed in relation to the implementation of recommendations in the range of teaching entrepreneurship, mainly because of introducing in high schools a compulsory subject called Fundamentals of Entrepreneurship. Unfortunately, the situation is markedly different at the higher education level.

Evaluation and validation standards of competence development

The content and methods of teaching entrepreneurship should be adjusted to the field and level of study. According to A. Richert- Kaźmierska, the most important element in working with first-cycle students is to direct their way of thinking, develop their creativity and ability to function in inter-disciplinary teams, treat problems systemically and find ways to solve them and establish interest in self-employment. As far as working with second-cycle students is concerned, the author thinks it is more necessary to provide students with the package of instruments that can support the implementation of their own business ideas. In this case, a teacher should adopt the role of a coach or mentor. However, regardless of the field and level of study, it is necessary within entrepreneurship-related subjects to try to make students (Richert-Kaźmierska, 2011):

– more creative and innovative,
– motivated to implement their own concepts,

– more communicative and ready to work in a team,
– independent and ready to take decisions under risky and insecure conditions.

Education outcomes evaluation methods
Teaching entrepreneurship should include the use of new activating methods of working with students, which are at the same time education outcomes evaluation methods. Traditional methods do not contribute to the development of entrepreneurial qualities and attitudes, which constitute a desirable education outcome. The following are particularly useful in teaching entrepreneurship:
– educational games (functional, decision-making, simulation, planning),
– projects, particularly those capable of solving specific companies' problems and carried out in close cooperation with them,
– mind maps,
– educational discussions.

The European Commission's report points to an existing discord between methods used in practice and those considered to be the most effective and appropriate in teaching entrepreneurship. The latter include (Richert-Kaźmierska, 2011):
– group and team techniques of generating new business ideas,
– making use of case studies,
– workshops devoted to creating business plans,
– organizing open lectures delivered by business practitioners,
– business operation simulations.

Practitioners' involvement in teaching
The methodology and substantive scope of entrepreneurship-based classes is closely related to a lecturer. The European Commission's report states that it is important for entrepreneurship academic teachers to display a high level of theoretical knowledge (highly reputed in the academic environment) and also to be business practitioners (should possess experience of running a business, be involved in business consulting and be members of self-regulatory organizations and/or business-professional associations).

A. Richert-Kaźmierska points out that the problem of many Polish institutions of higher education is the appropriate – following the European Commission's guidelines – preparation of lecturers, which concerns both public and non-public higher education institutions offering economic and non-economic study programmes. On the one hand, Poland lacks a system supporting the substantive and methodical development of academic teachers dealing with the issue of entrepreneurship. On the other hand, higher education institution authorities are not very willing to let business practitioners take part in the teaching process – especially in the range of obligatory subjects included in the study programme. It results, among others, from the following conditions (Richert-Kaźmierska, 2011):
– formal staff requirements for particular fields and types of study – where academic degrees and titles matter,
– the necessity of ensuring that there are enough teaching hours to fill the workload of teaching-research staff – the number of hours falling down with the regular decrease in the number of students.

The use of individual forms of counselling and financing transversal competences development programmes.

In the range of developing the competence of entrepreneurship, higher education institutions cooperate with numerous external entities and have the opportunity to take advantage of emerging programmes whose role is to support the development of the said competence. Many higher education institutions see the creation of the so-called "Business incubators" whose participants have a chance to improve their competence related to entrepreneurship as well as other competences referred to in the report (Sekuła, 2009, pp. 326-338).

Another form of developing the competence of entrepreneurship is a programme offered by the National Centre for Research and Development which is an invitation to submit applications for funding within the framework of Activity 3.1 under the Operational Programme Knowledge Education Development (competition No. 1/PRK/POWER/3.1/2015). Competences in Higher Education Knowledge, Education, Development (Competences, 2015).

8.1.4. Teaching the communicativeness in higher education in Poland

The study carried out in May 2014 by the Office of Career Services at Wroclaw University revealed that two the most desirable interpersonal competences identified by employers were: effective communication and teamwork (Communicativeness, 2015). Both competences, communicativeness and teamwork, are trained by students during classes, internships or work placements.

In the case of communicative competences, the widest gap between the needs and the current situation is observed by higher education institutions (the study commissioned by the National Centre for Research and Development). The study showed that employers rated the said competences the lowest (Analysis, 2014).

Representatives of higher education institutions paid particular attention to the mass character of higher education, particularly in some fields of study. This makes it difficult to use in the teaching process instruments such as independent written assignments and presenting one's own work results in front of larger groups of people. There are also limitations regarding the amount of time that lecturers may devote to evaluating and reviewing such assignments and presentations (Analysis, 2014).

Evaluation and validation standards of competence development
Developing the ways of assessing if and to what degree the intended education outcomes, specified at the level of particular subjects, programme blocks or the entire programme, are attained in the teaching process, e.g. through the use of education outcomes tables. Such tables include sets of evaluation criteria defined directly by a specific higher education institution running the programme.

If the programme contains gaps (when specific education outcomes defined for the programme do not have an equivalent in the outcomes connected with the subjects which make up this programme) or if there is redundancy (when the achievement of the same education outcomes is assumed in many subjects), then there is an adequate modification of the set of subjects, its substantive content or methods of conducting classes (Kraśniewski, 2009).

Education outcomes evaluation methods
Evaluation methods are based on appropriately designed student evaluation procedures. They are made up, first and foremost, by tests created in a way that allows them to measure achievements corresponding to the planned education outcomes (Kraśniewski, 2009).

For instance, in technical studies, exploration whether a student acquired an adequate ability to communicate can be implemented in two cases (Kraśniewski, 2009):

- in the case of a writing skill: through the evaluation of independent written home assignments (as regards language accuracy), reports, laboratory summaries, documentation related to projects done, and through the evaluation of assignments corrected by students in accordance with suggestions and remarks of persons checking assignments,
- in the case of a speaking skill: through the evaluation of presentations and discussions during seminars, tutorials, defense of project tasks, defending diploma papers, etc.

Practitioners' involvement in teaching

As it is shown in the study carried out in May 2012 by SGH Warsaw School of Economics, American Chamber of Commerce and consulting firm Ernst & Young, higher education graduates' inter-personal competences constitute the most important criterion evaluated by employers. It follows from the study that the skill of effective communication is the most sought-after feature amongst graduates (average score - 4.69 out of 5 maximum points to be obtained). Employers put significant emphasis on communication also during in-depth interviews where they stated the importance of presenting problems and their solutions in a clear way, presenting work results, making a presentation and a self-presentation. In written communication, employers expect higher education graduates to have a good command of computer software, be able to take down notes, draw up summaries and reports. Employers rate higher the communicative skills of higher economic school graduates than those represented by technical higher school graduates where communication and impression management are still a challenge. Interviews with employers also underlined an absolute necessity of being able to work in a team and in the case of multinational companies with people of different backgrounds, nationalities and religions where openness to other cultures, solutions and ways of communication is vital (Employers, 2012).

Employers suggest changes in the way of teaching, which may be advisable in the development of desired competences. They pertain, in particular, to closer cooperation with practitioners, working in project teams during classes, internships and work placements in companies in order to be able to confront their competences with business reality and train interpersonal skills in a professional context (Communicativeness, 2015).

The report of the National Centre for Research and Development, where qualifications and competences key for increasing graduates' competitiveness on the job market were analyzed, showed that 61% of the analyzed institutions of higher education consulted their study programmes with employers. It is a good prognosis for the future. The emergence of advisory/consulting bodies in higher education institutions, or even at particular faculties, are an effective information link between higher education institutions and employers, which makes it possible for the latter to communicate their needs and expectations related to graduates' competences (Analysis, 2014).

As it is shown in practice, employers do not have a direct impact on the adjustment of education standards and forms to job market requirements. They exert only indirect influence through taking on graduates holding degrees from specific fields of study and representing specific competences. It is important to hold consultations with offices of career services in higher education institutions but this is not enough. The expert opinion of the current situation in the higher education system in Poland concerning the relationship between the existing teaching programmes and job market needs shows a difficulty in adopting standards to

employers' needs who are often unable to accurately indicate what competences possessed by future employees will contribute to the growth of their companies (Expert opinion, 2014).

Currently, many programmes connected with the transversal competences development are being developed. One of such programmes is offered by the National Centre for Research and Development which invites the submission of applications for funding within the framework of Activity 3.1 under the Operational Programme Knowledge Education Power (competition No. 1/PRK/POWER/3.1/2015). Competences in Higher Education Knowledge, Education, Development (Competences, 2015). These projects are supposed to support higher education institutions in preparing future graduates for professional life.

8.1.5. Teaching the creativity in higher education in Poland

As it is pointed out by the Office of Career Services in Toruń (Kwiecińska-Zdenka, 2013), creativity is a soft skill which is considered to be one of the most desirable by contemporary employers (Kossowska, Sołtysińska, 2002). The most essential document - the Europe 2020 Strategy - establishing the main developmental directions for Europe points to the necessity of an "intelligent and inclusive" growth, where the key factor determining the development of innovativeness and civilization changes is to create conditions for the increase in the creativity potential of a society (Communique, 2010).

Ever-greater emphasis is being put in national standards regarding the developmental directions of the Higher Education (Resolution, 2011) on developing soft skills, including creativity. In connection with that, analyzing the guidelines contained in teaching programmes of a few institutions of higher education (Syllabi-Katowice, Syllabi-Wroclaw, Programmes-Poznan, Offer-Cracow), national standards related to the competence of creativity are defined by a range of values obtained by students in the range of acquired knowledge and skills. Values most frequently quoted in syllabi as far as knowledge is concerned include:

– ability to interpret contemporary social and economic doctrines and business theory, making use of advanced scientific terminology,
– ability to indicate the economic and social results of differences in countries' and regions' economic development,
– knowledge of modern concepts and instruments of cooperation and competition between economic systems and businesses,
– justification of the significance of business social responsibility and pointing to its practical application,
– explanation of the organization of teamwork on the basis of modern concepts,,
– identification of leadership styles and their conditions,
– acquaintance with the fundamentals of research methodology and rules for creating research instruments,
– formulation of principles regarding the performance of analyses and evaluation of team-based organization systems,
– explanation of the basis and significance of restructuring processes and strategic renewal of an organization,
– explanation of the essence and significance of institutionalizing teamwork activities,
– ability to present a company's (organization's) future vision integrating the views of classical and modern theory of organization and management.

Skills acquired by students in the area of the competence of creativity include:

– applying in work or advanced learning specialized knowledge related to a specific area of management and allied sciences,
– making use of modern ICT solutions,
– setting up and running a registered business and providing consultation related to the creation of new entities,
– performing observations of phenomena and processes in an organization and their analysis and interpretation; making use of advanced theoretical notions and research paradigms,
– identifying and formulating (structuring) research problems allowing to analyze complex problems, processes and events in the scale of an organization, national economy and globally,
– selecting appropriate methods and tools to describe and analyze problems and areas of an organization's activity and assessing their usefulness and efficiency,
– modelling and predicting the course of selected processes in an enterprise (institution), making use of advanced econometric methods, ICT tools and support provided by specialists,
– designing and applying in management a system of solutions measuring the performance of an enterprise/organization,
– integrating knowledge from various fields with the aim of creating innovative solutions to problems,
– participating in the process of taking strategic decisions, suggesting procedures related to problem resolution, making use of advanced methods and tools supporting such processes,
– performing a comprehensive diagnosis of a situation and critical evaluation of possible strategic variants,
– performing comprehensive audit of selected areas of an enterprise or entire organization,
– using norms and standards in the processes of planning, motivating and controlling (work, quality, etc.) at the integrated level,
– designing and managing changes in an organization,
– identifying sources of resistance to changes and developing a plan for their removal,
– designing and implementing motivation systems in an organization ,
– selecting and managing human, material, financial and information resources in order to effectively perform managerial tasks.

Evaluation and validation standards of competence development

Soft competences evaluation and validation standards have not yet been developed in many higher education institutions and constitute one of the elements which are being continually improved and implemented within the framework of study programmes. Nevertheless, one can see the emergence of elaborations and syllabi of subjects which contain dedicated tools for soft competences validation. They include multi-dimensional competence matrices, in which one points to the connection between education outcomes for study programmes and particular subjects and education models and framework for qualifications (European, national, local) (Frankowicz, 2010). As in the case of the remaining competences enumerated in the report, also in the case of the competence of creativity, developing the ways of evaluation is achieved in the realized teaching process, e.g. through the use of previously mentioned education outcomes tables which contain sets of evaluation criteria defined directly by a higher education institution where the programme is followed.

The necessity for creating standards also in the area of education outcomes evaluation must become an integral part of the education system. It results from the introduction of the Euro-

pean Qualifications Framework for lifelong learning (Commission, 2008) and the Qualifications Framework for the European Higher Education Area.

Education outcomes evaluation methods

Implemented and used methods of evaluating education outcomes constitute a certain fixed number of solutions in most higher education institutions. In the case of analyzed programmes and detailed syllabi they contain, Polish institutions of higher education mentioned in the previous point use the following evaluation methods:

- assignments related to project solutions or performance of individual tasks reflecting organizational problems – in the form of students' individual work,
- assignments related to project solutions or performance of individual tasks reflecting organizational problems – in the form of group work, where each student is to solve a partial individual problem and the project is regarded as an integrated organizational solution enabling to obtain the effect of synergy from teamwork,
- forms of individual presentations – evaluating the skill of self-presentation and application of multimedia tools to visualize the solved problems,
- forms of workshops and individual presentations – enabling the evaluation of the skill of presenting identified problems and suggesting solutions,
- introduction of matrix evaluation systems – containing the elements of self-evaluation, where task groups evaluate each other.

Practitioners' involvement in teaching

The competence of creativity, which is part of a set of soft competences, is also acquired by students through direct meetings and seminars held in the framework of particular courses, included in innovative teaching programmes. Tutors are more and more frequently inviting practitioners (entrepreneurs or corporate managers) to share their observations, comments and experience with students. Examples of such cooperation include: teaching cooperation between the Institute of Business Informatics at Wroclaw University of Economics and VOLVO, Credit Agricole, the Lower Silesia Chamber of Commerce and others; the Faculty of Computing and Communication at the University of Economics in Katowice and Telekomunikacja Polska, BPSC SA, COMARCH and others.

Application of individual counselling forms and financing transversal competences development programmes

As was the case with the previously discussed competences, also in the case of creativity, higher education institutions cooperate with numerous external entities having the opportunity to take advantage of programmes supporting the development of the above mentioned competences. The competence of creativity is developed also as part of classes and meetings held in Academic Business Incubators (Sekuła, 2009, pp.326-338).

An indirect form more and more frequently tied with funding the development of soft competences is student internships during which entrepreneurs provide symbolic financial coverage of students' several-month traineeship where they have an opportunity to work in a real team and solve real problems which face entrepreneurs.

Another form of developing soft competences (already mentioned before) is a programme offered by the National Centre for Research and Development inviting candidates to submit applications for funding projects within the framework of Activity 3.1 under the Operational Programme Knowledge Education Development (competition No. 1/PRK/POWER/3.1/2015). Competences in Higher Education Knowledge, Education, Development (Competences, 2015).

8.1.6. Teaching the teamwork in higher education in Poland

Graduates in the area of social sciences, including graduates in the field of management are expected to possess certain skills and show certain attitudes. These are competences, both professional, personal and social, which allow to play an active, civil role in the life of a community, particularly in the economic life and perform well in the job market. An important task of modern higher education institutions is to prepare students for developing their ability to work as part of a team. It is understood as a collection of knowledge, skills and attitudes allowing to perform work based on activity and involvement in tasks accomplished in a group and on striving for the attainment of a mutual aim, supplying solutions facilitating work, accepting coresponsibility for tasks, effective exchange of knowledge and experiences, receiving feedback, solving problems together and mutual support during task performance (Communique, 2012; Recommendations, 2006; Conclusions, 2009).

The study field of management belongs to the subarea of economic sciences within the framework of the education area of social sciences. It pertains not only to the scholarly output of fundamental disciplines such as economics and management science but also to allied disciplines such as psychology, sociology, law, political science. Knowledge obtained in the field of management is highly applicable and covers research theories and paradigms describing and explaining the research subject of the discipline of management science, that is the creation, operation transformation, development and cooperation of economic organizations, mainly enterprises, as well as organizations belonging to the public sector (central government and local government administration, scientific institutions, educational institutions, health care service, cultural institutions and other). The issues concerning organizations' operation and growth may be viewed in different aspects, e.g. according to types of organizations, according to the area of activity, according to resources, etc., which makes it possible to develop an extensive offer of specializations, directed towards a particular work context (e.g. managing health care units, quality management, human resource management, etc.). An additional element enhancing the applicable character of studies is the opportunity to achieve certain education outcomes directly in the work environment, as part of traineeship, work pursued or voluntary work.

Evaluation and validation standards of competence development

Graduates in the field of management, first-cycle studies, should possess:

– general knowledge related to economic sciences, detailed knowledge of management and allied sciences related to the operation and development of economic organizations, particularly enterprises, in their economic, social and legal environment, fundamental specialized knowledge,

– the ability to critically understand knowledge and its practical application to describe and analyze typical problems and areas of an enterprise's (institution's) activity and its environment,

– relevant preparation for active participation in decision-making processes and for the creation and implementation of complex undertakings in work and beyond,

– the ability to clearly and unequivocally present and consult among specialists their own conclusions as well as theoretical and practical conditions which underlie them,

– the ability to learn which enables them to continue studying and the ability to independently formulate and solve a typical research task using modern methods and tools of obtaining and processing information,

– the ability to understand professional and social obligations of a graduate in the area of social sciences.

Graduates in the field of management, second-cycle studies, should possess:

– comprehensive and extended knowledge related to economic sciences and advanced specialized knowledge related to management and allied sciences concerning the operation, growth and strategic renewal of economic organizations and systems under the conditions of evolving processes of European integration, globalization and demographic and environmental challenges,

– the ability, using advanced theoretical notions and research paradigms, to think in an abstract way and critically understand knowledge which enables to identify, describe, analyze and interpret complex processes and problems connected with an enterprise (institution) and its environment,

– the ability to integrate knowledge from various fields in order to perform a thorough diagnosis of a situation and create innovative solutions to problems in work environment and beyond,

– relevant preparation for active participation in international cooperation projects and understand-ing cultural differences,

– the ability to resolve social conflicts, arbitrate and encourage cooperation to achieve mutual aims,

– the ability to learn which enables them to continue studying and the ability to independently design and conduct research work drawing upon diverse and difficult to obtain sources of information,

– the awareness of bearing inalienable personal responsibility for decisions made in work and beyond.

The acquisition of the said skills by higher education students prepares them to work in a group and cooperate in future task teams.

Education outcomes evaluation methods

By analogy, as previously shown on the basis of soft skills, also in the case of the ability to work in a group, education outcomes evaluation methods used in most higher education institutions are similar and usually pertain to:

– work in project-based solutions – in the form of teamwork where each student is to solve a partial individual problem and the whole project is to be an integrated organizational solution,

– forms of group presentations – which assess the skill of self-presentation, making use of multimedia tools to visualize overcome problems and the ability of the group to assign individual tasks to particular team members,

– forms of workshops and group presentations – enabling to evaluate the skill of presenting identified problems and suggesting solutions,

– evaluation systems according to which task groups assess one another.

Practitioners' involvement in teaching

Similarly to the issue regarding previously discussed soft skills, also in the case of competences, the ability to work as part of a team is mainly picked up by students through direct meetings and tutorials, laboratory classes, lectures and seminars held within the framework of particular courses which are part of various teaching programmes. In this area, however, one tends to organize games whose aim is to simulate teamwork, take decisions under risky and insecure conditions and decide whether to trust or exclude selected players, etc. In order to obtain conditions as closely resembling the real operational context in business as possible, tutors invite practitioners (entrepreneurs, corporate managers) to share their experience with students and co-participate in simulation games.

The use of individual forms of counselling and financing transversal competences development programmes. In this case, analogical forms of counselling and financing are used, as it was the case with previously discussed soft skills.

8.1.7.Conclusion

In the chapter there were discussed chosen methods of teaching transversal competences in higher education in Poland. At the beginning it was presented wider point of view on higher education in Poland and pointed the main changes that appeared in higher education since year 2007. Next the detailed characteristics of methods used for teaching transversal competences: entrepreneurship, communicativeness, creativity and teamwork was introduced. There were also underlined the key aspects connected with teaching e.g. evaluation and validation standards or practitioners' involvement in teaching transversal skills.

In the next chapter there will be shown the Table of teaching methods.

8.2. Practical example of education – this especially in the transversal competences

8.2.1. The paradigm of education, including: practical education

In order to organize the epistemological and methodological considerations adopted (below) ranges of meaning important concepts.

The term paradigm introduced, applied in many areas of meaning and popularized T.S. Kuhn (Kuhn, 2001). This term comes from the Greek parádeigma. It is used, among others, to denote a the pattern model (also: analogies and metaphors) (Sł.wyr.obcych 1991; Krzyżanowski, 1999), also under the assumption if the assumptions (Przybyła, 2001). It may therefore be the denotation semantic in the strict sense (eg. generally recognized scientific achievement), or sensu largo (that is concern variable historical dimension/-s pan-philosophical/-s so-called disciplinary matrix/domain-specific learning, team specific beliefs, prejudices, universals, models), concerning the nature and structure of certain entities.Sometimes they (more or less consciously) shared by certain groups (eg. researchers, managers, etc.) and they allow during certain phases the development of science, the progress of knowledge in the field of the study of reality (Kuhn 2001; Krzyżanowski 1999). Awareness functioning paradigm/-s occurs frequently at the time of the rejection/ change, or inability to explain the situation based on existing concepts. Paradigms are part of the collective / group of social consciousness and as such exhibit inertia and the kind of "lag" in relation to the changes taking place in reality.

Teaching method: a specific way of working by a teacher enabling learners to acquire knowledge, develop skills and shape attitudes, involving a purposefully selected set of methods and activities (Goźlińska, 1997). Practical teaching methods: methods used to acquire knowledge and apply specific skills in a practical context, which allows students to assess the usefulness of content taught and skills acquired in everyday life and professional career (Goźlińska, 1997).

Transversal competences commonly known as generic skills or interdisciplinary competences may be used during the implementation of diverse tasks in many thematic areas. Such competences are defined as a combination of knowledge, skills and attitudes appropriate to situations necessary to meet social aims. They offer added value in relation to employment, social cohesion (European pact for youth), which explains the significance of lifelong learning as re-

gards adaptability to change and social inclusion. These competences were recognized as being important because of their transversal character (Sł.poj. 2015).

8.2.2. Conceptual diagnosis process

The process of education, ie. the collection, processing and use of knowledge (knowledge management approach) occurs at levels: individual, group and / or organization, and is a kind of whole. The author in the deliberations took so assumption that the learning process is taking place multilevel holism (= is a specific whole).

A look at the process of learning from the perspective of knowledge management (KM) produces interesting insights. Holistic and dynamic approach of the learning process (especially over longer periods of time) in the concept of copyright, runs a four step, cyclical nature-spiral, the trajectory of the helix (see. Figure 8.1) allows to diagnose the fact that knowledge (it flows associated with the acquisition, verification, development and exploitation within the a cone of knowledge/values) is the lifeblood of modern organizations (knowledge-driver) (Antczak, 2013).

The diagnosis should be carried (the normative approach) out in the space of knowledge (a cognitive):

- any barriers in the teaching process side: leading, learning, process, labor, environment closer and more educators and learners,
- identifying knowledge resources: students, scholars, both environments, available in the environment [Internet and other universities, good practices in companies, benchmarking (eg. int., processes, competition, people/objects, etc.)],
- identifying possible participants' expectations of the process: the Ministry of Higher Education (including stability/variability of the directions of this institution, legal and institutional tools, etc.), universities, training centers and business education, national and regional labor market,
- mechanisms to motivate and educate educated.

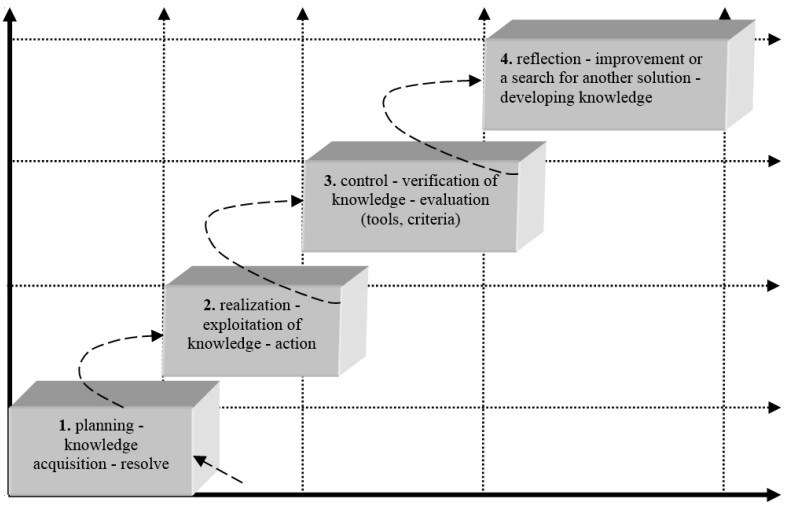


Figure 8.1. Four-learning process (= one cycle helix knowledge) levels: the individual, group/ collaborative team and organizational

The diagnosis should be carried (the normative approach) out in the course of the processes of education/ of training:

- identifying the mechanisms of the effect of the participants internal and external processes of education/of training,
- identifying the state, according to results or the status of formal documentation,
- identifying self-knowledge and growing experience employee.

The diagnosis should be carried (the normative approach) out in space effects:

- identifying evaluation tools and measurement,
- identifying the time and scope of the diagnosed issues, and the impact. other variables total score.

8.2.3. A review of selected case study

Inspiring way for the transformation of ways of functioning of universities (and the entire higher education system) is a benchmarking (Woźnicki, 2008). A careful analysis of the obtained data in this way allows for a significant modification of existing learning processes, taking into account the existing strengths and weaknesses of their sites. An example of a possible (and still rare, dispensed) for use both in space cognition (cognitive), and in the course of the processes of education / training (in the area of practical training in the area of transversal competences) – is method e-portfolio, which allows individuals to demonstrate competence cognitive, functional, personal and ethical purposes self-development, presentation and certification (Neczaj, 2011). It should also engage the students themselves to work in their undergraduate degree analyzed the reasons for the choice of fields of study and their impact on the situation of graduates in the labor market (SWPS, 2014).

Exemplification of successful diagnosis in the space of learning outcomes is an analysis of the causes of unemployment among university graduates (Bezrobotni, 2013). Especially a lot of valuable information related thereto may bring an analysis aimed at identifying key skills and competencies that increase the chances of graduates on the labor market (Analiza, 2014). A well, the analysis - allows the identification of the causes of this group, which is linked to the functioning of learning processes. Also, going beyond existing conditions, eg. Look and compare the situation of graduates in the international perspective can give valuable information for possible modification faculties (Pierwsze, 2013). Equally effective tool may be diagnostic validation analyst practices and practice (including - eg. the restoration of post-graduate practice for doctors) (Min.Zdr. 2015; Stud. 2015).

The author also proposes its own diagnostic tool when exploring problem. It takes account of, among others, variables such as: practicality/applicability, comprehensibility/concreteness, modernity/the classical, webbyness, time-consuming, cost effectiveness, amount of education, class size, versatility/specialization, compatibility, focus on problem solving, processing, individualization/team work, etc. - tested the Likert scale.

8.3. Mendeleyev`s table of the knowledge and qualifications transfer

8.3.1. Introduction

In our life we meet everyday new, different personal, professional, family, education, social and other problems.

There are two ways for their solution. The first is attempt to solve them without external support, i.e. with utilization of our competencies, knowledge and capabilities. In many cases this attitude is not sufficient, because do not possesses necessary skills, information, methods, tolls, which enable to find the best solution for the new problems. Another scenario is external oriented, where we ask for the help from our environment: firms, family members, colleagues, professionals, teachers, coachs, trainers and so on.

In every case we participate in different types of teaching processes, which deliver us more and more techniques and instruments, which we can use for the solution of our problems. Teaching and education processes are encountered to the field of the creative industries. They generate extremely high added value in comparison with the traditional industries like heavy metal, food and other industries.

Learning processes are the most important factor in multinationals strategies, training and coaching agencies; in some extent we can say that they constitute the core competence of the modern networking companies operating in the sector of creative industries. We could no longer say that learning processes are specific only in education sector; in reality they are key success factor in every kind of human activity.

Learning and education processes are the most important sector of the creative industries; they create over average added value in comparison to the traditional industries. Therefore they constitute the crucial part of the global strategies in education system and also in corporate, consulting and training agencies.

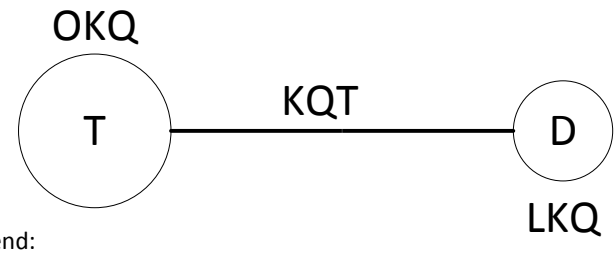
The number of the new learning methods is constantly increasing, which causes numerous problems for coaches, trainers and teachers, in choosing learning techniques adequate to:

- organization philosophy,
- enterprise structure,
- management system,
- production line,
- school and disciple value system.

8.3.2. Basic problem: learning and selflearning

In traditional learning system dual approach: teacher – disciple is dominated (fig. 8.2). There are the following weaknesses of such attitude (fig. 8.2):

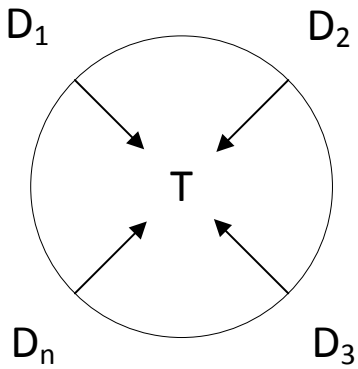
- too big psychological and sociological distance between teacher and student,
- overcapacity of teachers (master, guru) knowledge and qualifications, which limits the shortening distance between professor and student,
- too late knowledge and qualification transfer, which is the result of the linear approach in the teaching process,
- the teacher occupies the central position in learning process (fig. 8.3).



Legend:

T – teacher
D – disciple
KQT – knowledge and qualification transfer
OKQ – overcapacity of the knowledge and qualification
LKQ – lack of the knowledge and qualification

Fig. 8.2. Duality in learning process. Source: Own elaboration.



Legend:

T – teacher
$D_{1,2,3,...n}$ – disciples

Fig. 8.3. Focusing of the learning processes. Source: Own elaboration

In the model presented on fig. 8.3:

- teacher is "crucial player",
- disciples (holons) are located on peripheries,
- dominate in – processes (teacher possesses competitive advantage in form of overcapacities of knowledge and qualifications).

In reverse model underlying contemporary pedagogical system, the teacher generates the following out – processes:

- monitoring of the students values, attitudes, behaviors and expectations,
- motivation of the students to the continuos problem sowing (fig. 8.4).

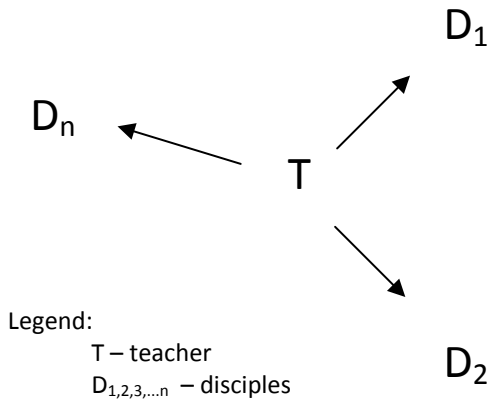


Fig. 8.4. Out – learning processes. Source: Own elaboration

8.3.3. Transfer knowledge and qualification model (Mendeleyev`s table)

Modern teacher (trainer, moderator, coach, professor) should apply in the process of choosing compatible methods of knowledge and qualification transfer the holistic approach (fig. 8.5) defined by following characteristics:

- knowledge (technical, economical, social, art and so on) already exist (we commonly detect it),
- teacher and students are testing themselves,
- more important is knowledge socialiaztion process (from tacit knowledge to tacit knowledge),
- transfer of the experimental knowledge is more useful than formal delivering of the datas and informations.

Mendeleyev`s table of knowledge and qualification transfer (table 8.1) was build on the base of the holistic paradigm of the knowledge and qualification co-detection and co-creation, which overcomes the following weaknessess of the classical learning methods:

- linearity,
- duality,
- forecasting of the future on the base of the past and present,
- confrontation of the teacher (knowledge deliverer) and disciple (knowledge consumer).

Mendeleyev`s table of knowledge and qualification transfer (table 8.1.) was build on the base of the holistic paradigm of the knowledge and qualification co-detection and co-creation, which overcomes the following weaknessess of the classical learning methods:

- linearity,
- duality,
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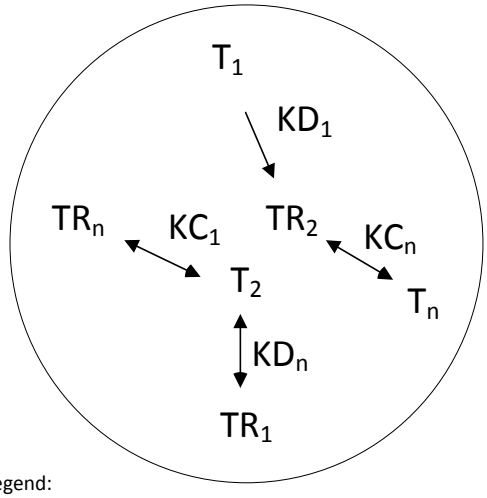

Legend:

T – trainers
TR – trainees
$KD_{1, 2, n}$ – knowledge co-detection
$KC_{1, 2, n}$ – knowledge co-creation

Fig. 8.5. Holistic model of the knowledge co-detection and co-creation. Source: Own elaboration

In the "managerial – trainings" model presented through Mendeleyev`s table (table 8.1.) are included the following elements and proposals:

- possibility of continuos broadening of the new knowledge training methods,
- the division of the methods oriented on knowledge or qualifications transfer and improvement,
- theory is more important than praxis (such assumption is specific for success in creative industries),
- correlation possibility between methods of knowledge and qualifications transfer and knowledge (theoretical and practical) and qualifications (mental or practical) fields.

		CT	C	S	W	OT	BN	MG	BG	HT	SG	e	WP	IM	SE	o
KQF																
K	TK															
	PK															
Q	MQ															
	PQ															

Table 8.1. Mendeleyev`s table of knowledge and qualifications transfer. Source: Own elaboration

KQF – knowledge and qualifications fields
K – knowledge
Q – qualifications
PQ – practical qualifications (real sphere transformation)
MQ – mental qualifications (logic, kognivistic, analysis etc.)
CT – classical teaching

C – conferences
S – seminars
W – workshops
OT – organization theatre
BN – business narrations
MG – managerial games
BG – business games
TK – theoretical knowledge
PK – practical knowledge
PQ – practical qualifications
HT – heuristic techniques
SG – simulation games
e – e-learning
WP – work praxis
IM – intuition methods
SE – selflearning
o – other

Final remarks

1. Holistic approach is very useful in the modern methods of knowledge and qualifications transfer.
2. Dual teaching is not adequate for creative industries.
3. Training agents should confront model of knowledge and qualifications transfer with the business model of the partner.
4. Key factor in the Mendeleyev`s table is the play in the knowledge and empty (no knowledge) fields of the corporations, trainers, disciples etc.

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9. PROCESS TOOLS TO IMPROVE THE QUALITY OF EDUCATION IN THE CREATION OF TRANSVERSAL COMPETENCE

Iwona CHOMIAK-ORSA

9.1. Process tools to improve the quality of education in the entrepreneurship creation

9.1.1. Methods are using in the area of competence "entrepreneurship" creation

In the teaching process on the tested universities used a variety of techniques that you can use to raise the knowledge of students in the area of competence of the "entrepreneurship"

According to the report drawn up as a result of the implementation of the project Erasmus+ under title.: The acceleration method of development of transversal competences" identified were numerous techniques and teaching methods used in the classroom to improve theoretical knowledge of students in the area of creating competences "entrepreneurship". Summary of selected techniques presents table 9.1. In the rendered table that were, only those techniques that have earned the pointer over 5.00.

Practical teaching method (alphabetical)	Ranking of the method (Matrix SUM)
Activating thinking	6,19
Brainstorming	7,74
Business incubators	6,45
Business Model Canvas	5,42
Business narrative	6,19
Case study	8,26
Consultations	5,68
Contest	5,42
Cooperative methods	6,19
Educational simulation games	7,48
Exercises/trainings	6,97
Group work/team work	5,16
Interships/practical training/ hands-on work experience, on the job learning/ working life experiences	5,42
Lectures delivered by eminent speakers representing the world of science, business and politics	6,45
Management training	7,48
Practical classes	6,71
Problem solving	5,42
Project method	6,97
Simulation	5,16
Start – up	6,45
Student work	6,97
Work placement study activities	4,90
Workshops	5,42

Table 9.1. Ranking of the methods are using in the area of competence "entrepreneurship" creation.

Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

Both listed in table 1 teaching techniques as well as techniques, which have been the result of below 5.00 can be constituent elements for the creation of the so-called. process improvement tools level of education selected transversal competences. So the railway chapter points will include examples of procedural tools that can support teaching in the area of theoretical and practical. In the last section presented is an example of a hybrid tool that supports the teaching of both theoretical layer as well as allowing you to educate practical skills.

9.1.2. Process tools in theoretical area of competence "entrepreneurship"

The Ministry of Science and Higher Education placed "entrepreneurship" as a subject in the education standards. In the standards of theoretical teaching entrepreneurship includes many definitions such content as (Richert-Kaźmierska, p. 211):

– the definition of entrepreneurship, types of entrepreneurship and entrepreneurial organizations,
– the presentation of an entrepreneur, his/her desirable qualities and ways of functioning,
– the presentation of infrastructure supporting the development of entrepreneurship

In the teaching of theoretical aspects of entrepreneurship are the most frequently used methods that do not have high evaluation studies. Guided by the procedural requirements, however, you can construct an algorithm use appropriate teaching techniques, which will help to achieve better effects creating competence "entrepreneurship". An example of a model solution was presented in Figure 9.1.

Proposed in the model methods have been divided-similarly as in the report on the:

– problem solving, methods,
– activeting metods,
– demonstrating methods,
– programmed methods.

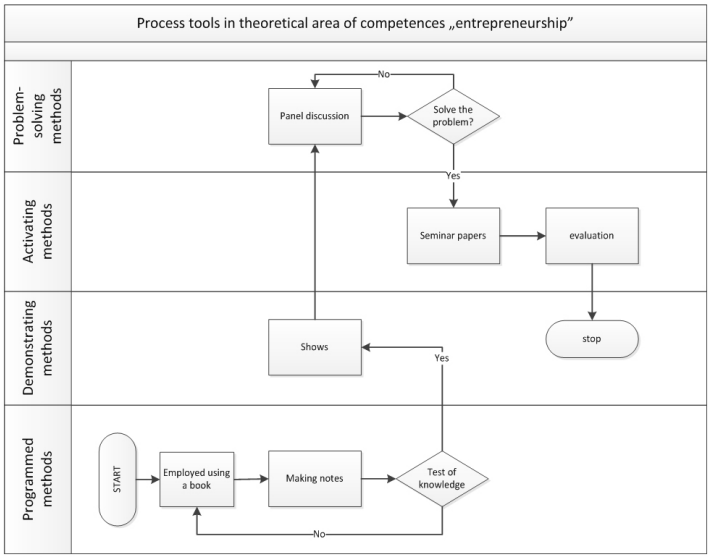

Figure 9.1. Model of process tools in theoretical area of competence "entrepreneurship". Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

Although methods such as: "employed using a book" and "making notes" have received low ratings as a method of raising the quality of education, the author believes that they should form the basis for theoretical under all four transversal competences.

9.1.3.Process tools in practical area of competence "*entrepreneurship*"

Traditional methods using at the more European University do not contribute to the development of entrepreneurial qualities and attitudes. Contemporary teaching entrepreneurship should include the use of new activating methods of working with students.

Many of new methods in education following are particularly useful in teaching entrepreneurship:

– educational games – for example: educational simulation games, business narrative, organization theatre; that develop skills such as: decision-making, phantasy thinking, activating thinking, planning,

– design classes – for example: case study, start-up projects, project creation methods; that develop skills such as: capable of solving specific companies' problems, and doing decision under conditions of uncertainty,

– graphic rendering and simulation situation of decision-making and business processes – for example: mind maps, Business Model Canvas,

– method to facilitate the exchange of views – for example: educational discussions, brainstorming.

Figure 9.2 proposed process model has been to assist practical skills competence of "entrepreneurship".

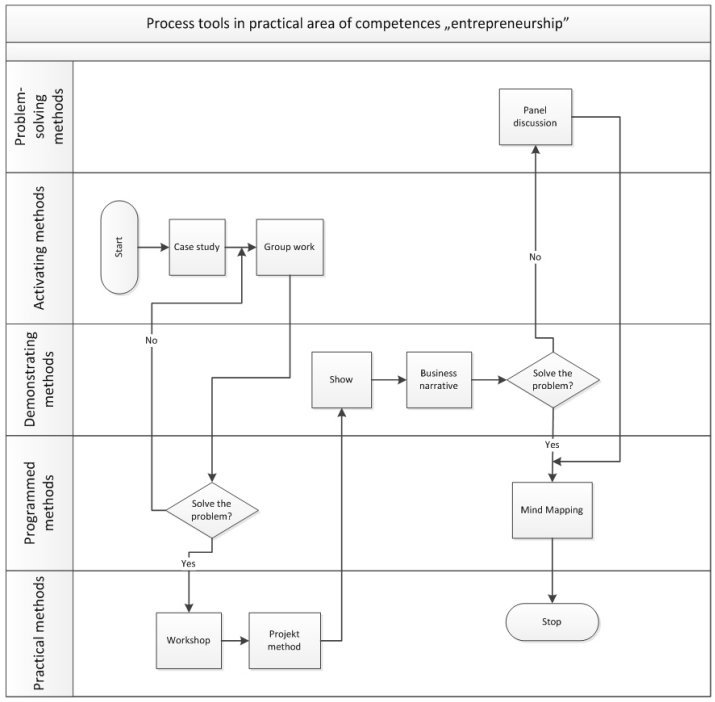

Figure 9.2. Model of process tools in practical area of competence "entrepreneurship".
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.1.4. Hybrid tools blended theoretical and practical skills of competences "entrepreneurship"

To ensure that the educational process a comprehensive quality education within the competence of the "entrepreneurship" requires the use of tools that allow students to develop knowledge of both theoretical and practical skills. So in the process of education should be used hybrid tools which include both techniques to raise knowledge and forming practical skills. In Figure 9.3 was presented a hybrid tool model raise the quality of education in the creation of competence "entrepreneurship".

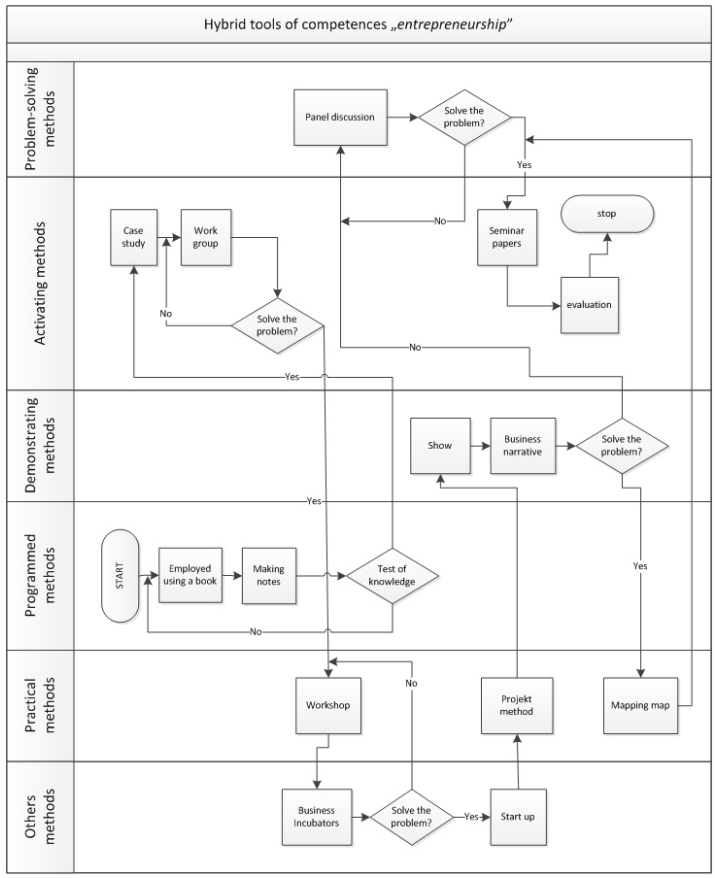

Figure 9.3. Hybrid model of competence "entrepreneurship" creation.
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.2. Process tools to improve the quality of education in the communicativeness creation

9.2.1. Methods are using in the area of competence "communicativeness" creation

One of the most desired by employers is interpersonal competence "communication skills". As shown by a study carried out by the National Centre for Research and Development, the level of having this competency for graduates is very low.

Just as in the case of competence "entrepreneurship" also in relation to the competence "communication skills" identified have been teaching methods which, in the opinion of the experts have the greatest importance for the successful creation of this competency. Summary of selected techniques using in creativity of "communications" presents Table 9.2. In the rendered table that were, only those techniques that have earned the pointer over 5.00.

Practical teaching method (alphabetical)	Ranking of the method (Matrix SUM)
Brainstorming	7,68
Conferences, symposiums	5,52
Cooperative methods	6,72
Courses	5,28
Employed using a computer	5,04
Exercises/trainings	7,44
Group work/team work	8,16
Interships/practical training/ hands-on work experience, on the job learning/ working life experiences	5,04
Management training	6,48
Panel discussion	6,00
Practical classes	5,28
Problem solving	5,04
Shows	5,28
Student work	6,00
Workshops	6,00

Table 9.2. Ranking of the methods are using in the area of competence "commnicativeness" creation.
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.2.2 Process tools in theoretical area of competences "communicativeness"

In the case of competence "communication skills" creating process simplify theoretical teaching tools, the situation is the same as in the previous paragraph.

In the teaching of theoretical aspects of "communicativeness" are the most frequently used methods that do not have high evaluation studies. Guided by the procedural requirements, however, you can construct an algorithm use appropriate teaching techniques, which will help to achieve better effects creating competence "communicativeness". An example of a model solution was presented in Figure 9.4.

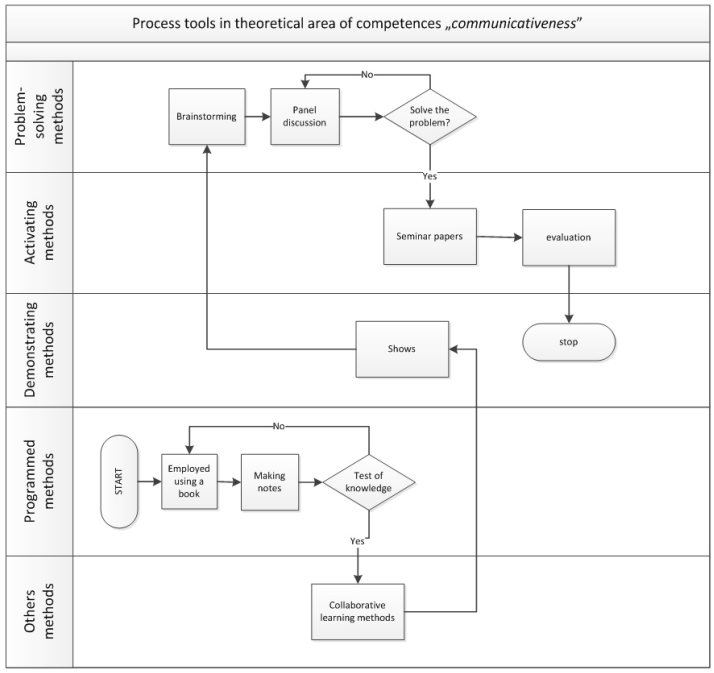

Figure 9.4. Model of process tools in theoretical area of competence "communicativeness". Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.2.3. Process tools in practical area of competence "communicativeness"

Practical skills in the area of "communication" is one of the most important competence of graduates. View this study confirms Report prepared in the 2012 by SGH Warsaw School of Economics, American Chamber of Commerce and consulting firm Ernst & Young.

Also in the case of competence "communication" contemporary teaching should include the use of new activating methods of working with students.

Many of new methods in education following are particularly useful in teaching practically skills in the area of "communications":

– exercises in teams – for example: worfshop, team work, cooperative methods, project methods; tools for picking up skills to communicate in a group, clear formulation of thoughts, clear message tasks, effective division of labour,
– educational games – for example: business narrative, organization theatre; that develop skills such as: decision-making, activating thinking, planning,
– graphic rendering and simulation situation of decision-making and business processes – for example: mind maps, Business Model Canvas,
– method to facilitate the exchange of views – for example: educational discussions, brainstorming.

Figure 9.5 proposed process model has been to assist practical skills competence of "communications".

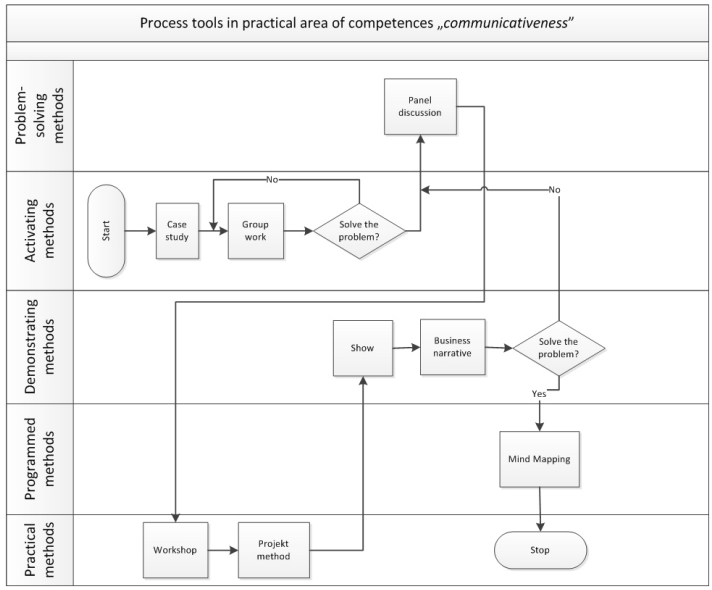

Figure 9.5. Model of process tools in practical area of competence "communications".
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.2.4. Hybrid tools blended theoretical and practical skills of competence "*communicativeness*"

Although communication is a competence that should be educate first of all on a practical level, theoretical knowledge is the basis for its development. Thus, and in this area should use process tools, which will include both teaching methods training of theoretical knowledge and practical skills. Figure 9.6 presents the proposed process model was a hybrid tool supporting learning processes in the creation of competence "communication" skills.

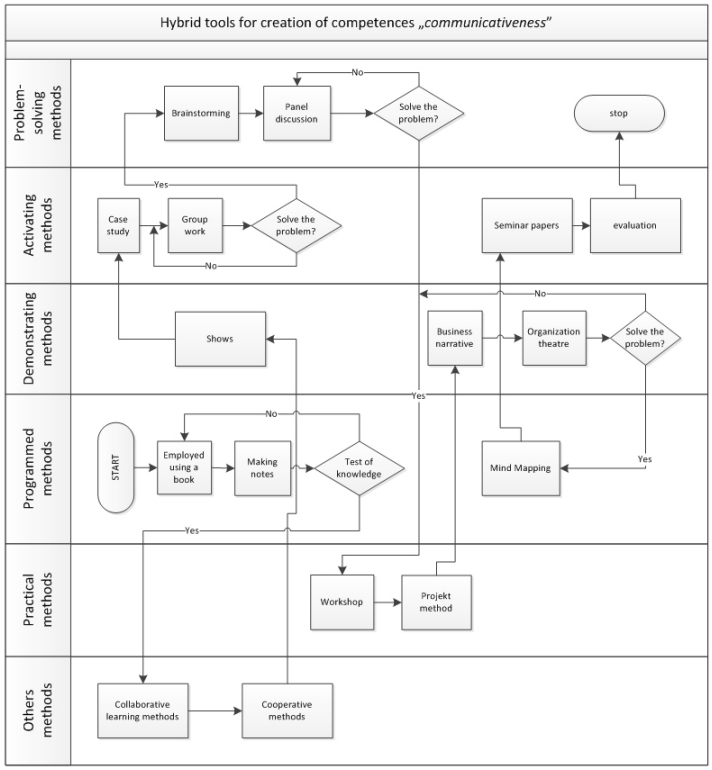

Figure 9.6. Hybrid model of competence "communicativeness" creation.
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.3. Process tools to improve the quality of education in the creativity

9.3.1. Methods are using in the area of competence "creativity"

Changing environmental conditions the organization determine the search for creative solutions to problems. "creativity" is one soft skills, which is now one of the most sought after by employers of competence. On the base national standards related to the competence of creativity are defined by a range of values obtained by students in the range of acquired knowledge and skills.

A number of skills are concentrated in the competence of "creativity" was mentioned in the section entitled: The characteristic of the choosen methods of teaching transversal competneces in higher education in Poland" in this paper.

Just as in the case of competences "entrepreneurship" and "communicativeness" also in relation to the competence "creativity" identified have been teaching methods which, in the opinion of the experts have the greatest importance for the successful creation of this competency. Below in table 9.3 are presented selected techniques.

Practical teaching method (alphabetical)	Ranking of the method (Matrix SUM)
Activating thinking	6,47
Brainstorming	9,96
Business narrative	5,98
Case study	7,97
Cooperative methods	5,48
Educational simulation games	7,22
Exercises/trainings	6,23
Group work/team work	5,48
Interships/practical training/ hands-on work experience, on the job learning/ working life experiences	5,23
Lectures delivered by eminent speakers representing the world of science, business and politics	5,23
Management training	6,23
Mind mapping	6,97
Practical classes	5,48
Problem lecture	5,23
Problem solving	7,22
Production classes	2,74
Project method	6,72
Science clubs, student organizations	4,23
Shows	5,48
Simulation	5,98
Start - up	6,23
Student work	6,23
Travel	5,48
Workshops	6,72

Table 9.3. Ranking of the methods are using in the area of competence "creativity"
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods

9.3.2. Process tools in theoretical area of competences "*creativity*"

Creativity is competence, which is primarily a practical dimension. However, the practical skills should be backed up by theoretical knowledge, which can and should expand their horizons of contemporary university graduates. So the below presented is an example (figure 9.7) of procedural tool, which, through the selection of appropriate teaching techniques for efficient transfer of necessary knowledge as well as its verification in the area of competence of the "creativity".

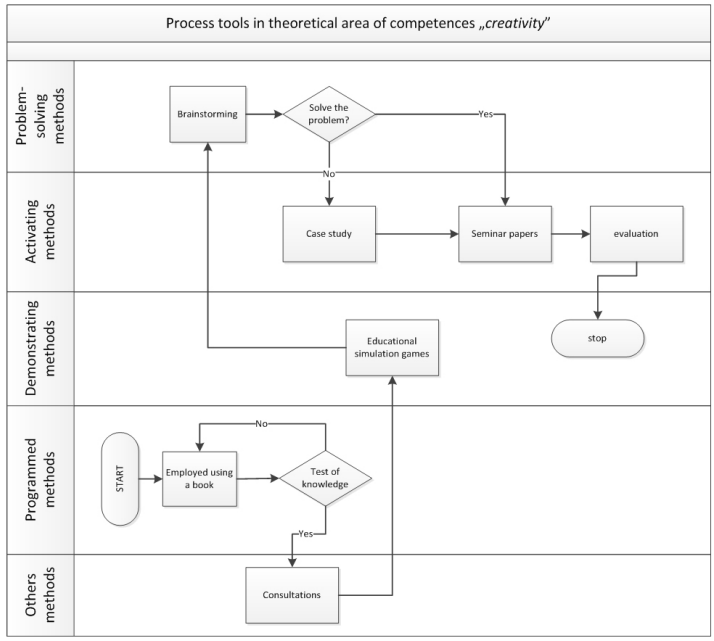

Figure 9.7. Model of process tools in theoretical area of competence "creativity".
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods

9.3.3. Process tools in practical area of competence "*creativity*"

The competence of "creativity" is a typical skill soft. More and more often in the educational process to create this competency is done by simulating real situations to enforce cooperative search for creative solutions.

Also in the case of competence "creativity" contemporary teaching should include the use of new activating methods of working with students. Among these methods are:

– method to facilitate the exchange of views – for example: educational discussions, brainstorming; which will allow you to place the problem and discuss possible solutions;
– ways to identify and describe the issues – for example: case study, management training; for systematising it issues and organize ideas solutions;
– exercises in teams – for example: worfshop, team work, cooperative methods, project methods; tools for picking up skills to communicate in a group, clear formulation of thoughts, clear message tasks, effective division of labour,
– graphic rendering and simulation situation of decision-making and business processes – for example: mind maps.

Figure 9.8 proposed process model has been to assist practical skills competence of "creativity".

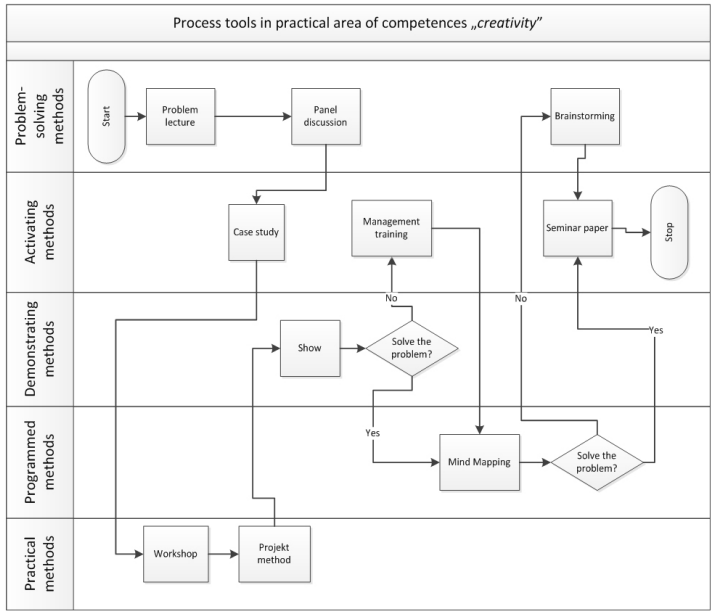

Figure 9.8. Model of process tools in practical area of competence "creativity".
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.3.4. Hybrid tools blended theoretical and practical skills of competence "*creativity*"

As with the previously discussed competence, also in the case of "creativity" the best educational effects can only be achieved through the use of tools that connect the transmission of theoretical knowledge in raising practical skills.

Figure 9.9 presents the proposed process model was a hybrid tool supporting learning processes in the creation of competence "creativity" skills.

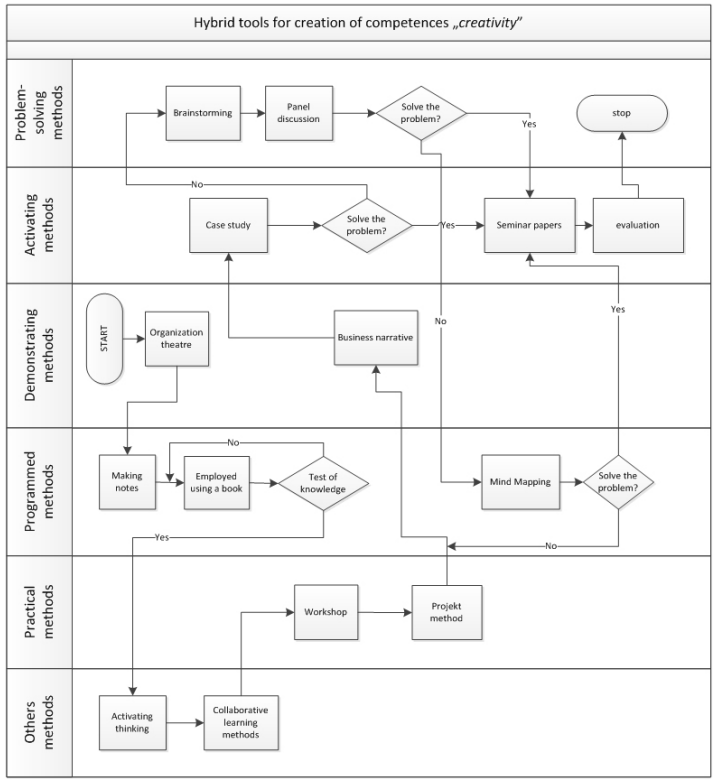

Figure 9.9. Hybrid model of competence "creativity".
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.4. Process tools to improve the quality of education in the teamwork

9.4.1. Methods are using in the area of competence "teamwork"

Progressive development of information technology has caused the demotion of social skills. So more and more attention is being focused on improving education in the area of creating social competences, among which particularly important is the ability to work in a group. The knowledge society, the creation of economic value as a result of the provision of services of knowledge – are the elements that determine the need for education growing such characteristics and attitudes as the ability to formulate thoughts, clear transmission of commands, cooperation under the conditions of risk and uncertainty.

Just as in the case of competences "entrepreneurship", "communicativeness" and "creativity" also in relation to the competence "teamwork" identified have been teaching methods which, in the opinion of the experts have the greatest importance for the successful creation of this competency.

In table 9.4 was presented to the ranking of the tested teaching techniques to use in the creation of competence "teamwork".

Practical teaching method (alphabetical)	Ranking of the method (Matrix SUM)
Activating thinking	6,02
Brainstorming	7,53
Case study	6,53
Collaborative learning methods	5,27
Cooperative methods	7,03
Educational simulation games	6,02
Exercises/trainings	7,78
Group work/team work	10,04
Interships/practical training/ hands-on work experience, on the job learning/ working life experiences	5,27
Management training	6,28
Practical classes	5,52
Problem solving	5,27
Project method	5,02
Science clubs, student organizations	5,77
Student work	5,77
Workshops	6,78

Table 9.4. Ranking of the methods are using in the area of competence "teamwork".
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.4.2. Process tools in theoretical area of competence "*teamwork*"

In the process of transferring the theoretical knowledge that competence "teamwork" proposed was the model presented in Figure 9.10.

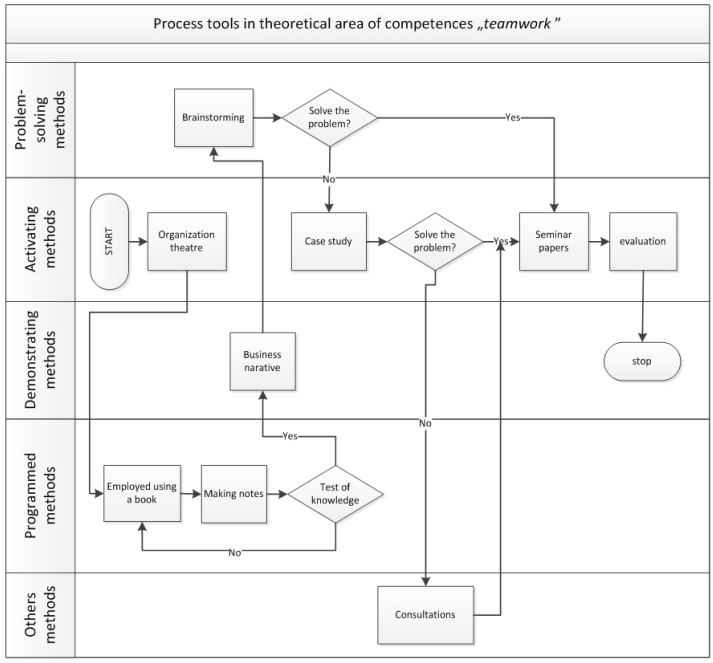

Figure 9.10. Model of process tools in theoretical area of competence "teamwork".
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.4.2. Process tools in practical area of competence "*teamwork*"

Similarly as in the case of the previously discussed competence-also for "teamwork" is of particular importance to create among the students practical skills.

It is very important to use supporting tools to develop to and self-analysis skills and then formulate conclusions and clear their presentation on the background of the group. In order to obtain conditions as closely resembling the real operational context in business as possible, tutors invite practitioners (entrepreneurs, corporate managers) to share their experience with students and co-participate in simulation games.

Also in the case of competence "teamwork" contemporary teaching should include the use of new activating methods of working with students. Among these methods are:

– educational games – for example: business narrative, organization theatre; that develop skills such as: decision-making, activating thinking, planning,
– method to facilitate the exchange of views – for example: educational discussions, brainstorming; which will allow you to place the problem and discuss possible solutions;
– ways to identify and describe the issues – for example: case study, management training; for systematising it issues and organize ideas solutions;
– exercises in teams – for example: worfshop, team work, cooperative methods, project methods; tools for picking up skills to communicate in a group, clear formulation of thoughts, clear message tasks, effective division of labour,

– graphic rendering and simulation situation of decision-making and business processes – for example: mind maps.

Figure 9.11 proposed process model has been to assist practical skills competence of "teamwork".

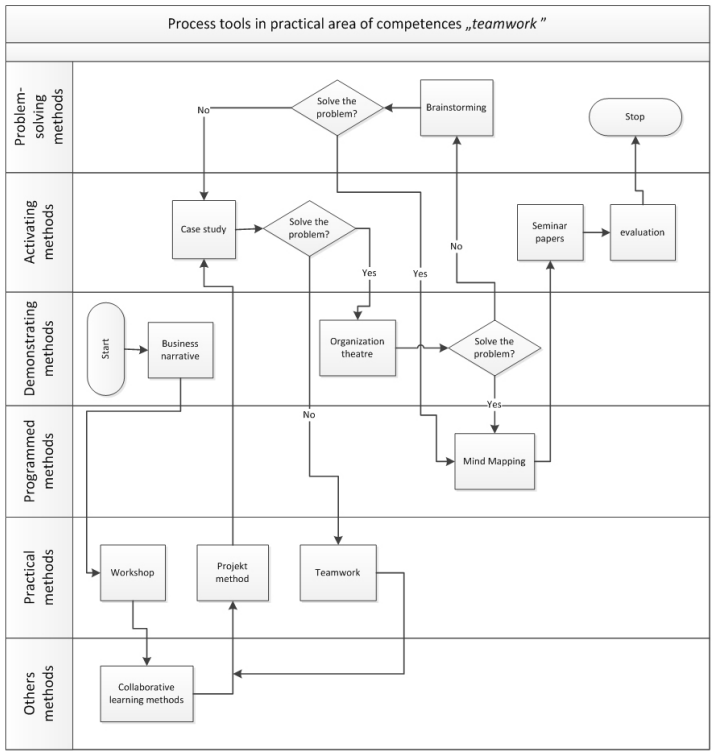

Figure 9.11. Model of process tools in practical area of competence "teamwork".
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

9.4.3. Hybrid tools blended theoretical and practical skills of competence "teamwork"

As with the previously discussed competence, also in the case of "teamwork" the best educational effects can only be achieved through the use of tools that connect the transmission of theoretical knowledge in raising practical skills.

Figure 9.12 presents the proposed process model was a hybrid tool supporting learning processes in the creation of competence "teamwork" skills.

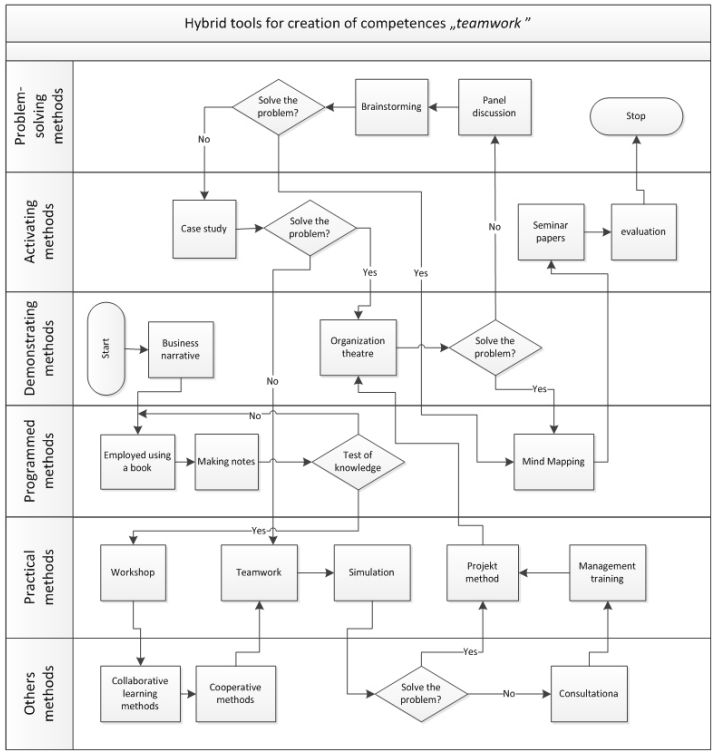

Figure 9.12. Hybrid model of competence "teamwork" creation.
Source: The report concerning applied teaching methods of transversal skills and methods of practical trainings; Elaborated by Poznan University of Technology; Poznań 2016; Matrix – evaluation of some methods.

In this chapter were presented examples of procedural tools that can be used in educational processes at universities. Of course the tools presented are only examples of possible procedures and can provide a starting base for the creation of learning algorithms applied in practice.

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10. PRACTICAL TEACHING OF STUDENTS IN FINLAND AND ANALYSIS OF TEACHING METHODS OF TRANSVERSAL COMPETENCES

Hannu SIMI

10.1. Practical teaching in Finland

10.1.1. Characteristics of practical teaching methods of transversal compenteces

Ministry on Education and Culture sets goals to the practical teaching in Finland. Active participation of the representatives of working life had a strong role in developing ways of practical teaching. Practical teaching methods in Finland are a result of years of developement plans. Developement was based on the practical needs of enterprises. The declining supply of labour in the future will bring socio-political challenges. The supply of labour by young people has to be enough to satisfy the needs of the world of work. It is necessary to introduce more means to increase supply. (Ministry of Education and Culture 2015).

There are a lot of good qualities needed in working life. Workers should be creative an innovative, they should be sensible and well motivated. They should also be pedagogically feasible and applicaple to working life. There are many different kind of methods of practical teaching. The emergence of new occupations and the rapid changes in the world of work also bring new methodological development challenges.

Foresight and anticipation of education and training have been developed vigorously in recent years and the results are utilised in targeting provision and developing educational contents. Universities of applied sciences has a strong role producing skilled workforce to the job market. Teachers are highly qualified and they have a wide autonomy at their work. One of the means to get skilled and motivated workforce is entrepreneurship education. From the perspective of the education sector, these objectives increase also the significance of adult education and training.

Practical training is part of all the Bachelor´s degrees completed at the universities of applied sciences. Practical training means studying which takes place in a company or of business, offering the student the opportunity to adapt what she or he has learned in practise and develop professionally. It must be well planned and supervised.

Flexible use of classes, laboratories and equipments. Learning by doing, making and learning from corrected mistakes. Joy of learning. Good learning results and flexibility in learning practises. The scope of the practical training varies from 30 to 120 credits, depending of the field of study. This equals 20 – 80 weeks, i.e. 5 – 20 months of full time work. The practical training can be completed in parts and for separate employers in Finland or abroad. (National Board of Education, 2016).

A Student must reflect on what type of practical training helps her or him to develop professionally and is suitable for the students own career plans. He must find a place where she or he completes the practical training and be aware of how the practical training process works to familiarise students under supervision with the essential tasks related to a degree, analyse the developement challenges of working life and set individual learning objectives and the needs of the employer. Representatives of working life take active part in evaluation planning and

execution of the evaluation. The contents are framed in accordance with a commission from the Ministry of Education and Culture. (Ministry of Education and Culture 2015).

A completed upper secondary qualification opens up a huge number of opportunities to develop competence and study more. After vocational upper secondary qualification it is possible to deepen and expand competence with a further vocational qualification and specialist vocational qualification at the educational institution. There are over 300 further vocational qualifications and specialist vocational qualifications. They are competence-based qualifications, which are completed by demonstration of vocational skills in an examination. (Opetushallitus, 2016).

Additional studies are not necessarily needed but many people aiming for further vocational and specialist vocational qualifications develop their competence in preparatory education lasting 1–1.5 years. It is possible to apply for further vocational and specialist vocational qualifications by contacting the educational institution directly. It is also possible to apply to study at a university of applied sciences or a university. Higher education institutions decide on their student selection themselves. Universities of applied sciences and universities select their students through entrance examinations. Vocational secondary education offers a possibility continue studies at the higher education. Most of the further studies are done at the Universities of Applied sciences. (http://www.ammattiosaaja.fi/en/further-studies).

The Evaluation is included in the vocational education providers and institutions. It includes planning, execution and evaluation together with working life. The cost effects of the vocational skills demonstrations, the adiministrative effects and Evaluation was orgnized through a network of evaluation experts. The data was collected from the education providers and also from qualification groups. (Foresight and Effective Evaluation 2020. (The Strategy of Finnish Education Evaluation Centre. Juvenes Print – Suomen Yliopistopaino Ltd, Tampere).

10.1.2. Entrepreneurship education as a tool for practical teaching

Entrepreneurship is a key driver in of economic growth, employment, innovation and productivity. We are in need of promoting new entrepreneurship to transfer companies knowledge and skills to the next generation. Entrepreneurship education in is a life long process to enchance creativity and innovation. An entrepreneurial culture is realized in cooperation with the operational working environment. (Ristimäki Kari (2004. Yrittäjyyskasvatus. Yrityssanoma Oy, Järvenpää).

We are in a process from school to learning community and peer learning. Everyone is a learner and everyone is a teacher. Working life orientation and entrepreneurial thinking are pivotal in todays education. There are a lot of good practises and projects to be used for entrepreneurship education. By breaking traditional silos, transforming education into co-learning, where entrepreneurs, students, educators and other parties can all contribute equally.

There are also tensions pertaining to community boundaries, operational culture, structure and leadership. An innovative, entrepreneurial community inevitably contains criticising and destructive forces. In terms of community support, enthusiasm and joy of work emerge as particularly meaningful forces. Work enthusiasm and tolerance of conflict in knowledge communities could advance vocational education substantially.

Promotion of entrepreneurship has been one of the aims of Finnish higher education policy. There was a strategic intent, according to which "every higher education institution will have

an approved operating method that encourages and provides skills for a career as an entrepreneur, generates innovations and creates favourable conditions for businesses to grow". (Ministry of Education 2009:10).

Additionally, the report introduced numerous measures that make reaching this vision possible. In 2014, the Ministry of Education and Culture commissioned a report from Lappeenranta University of Technology (LUT) on how the guidelines for entrepreneurship education (Ministry of Education 2009:7) were implemented on different levels of education. This report revealed that support for entrepreneurship shows in very different ways in the operation of higher education institutions, and it was noted in the report that before new concrete goals regarding entrepreneurship are introduced to higher education, the current practices in higher education institutions in this matter must be separately investigated.

Therefore, Finnish regions and municipalities have begun targeted development actions towards improved entrepreneurial learning. In Northern Ostrobothnia region it was found necessary to analyse what is the current state of entrepreneurship education in the regions educational organizations and write a new strategy and a regional implementation model of entrepreneurship education based on cooperation and dialogue with stakeholders across school levels and organizational boundaries. The new strategy was published 2016.

10.1.3. Entrepreneurship education in North Ostrobothnia

The significance and valuation of entrepreneurship have increased in Finland. The majority of new jobs are created in micro and small companies. We need both new entrepreneurs and people to continue already established companies. In North Ostrobothnia, some 3,500 companies will face a change of ownership in the next ten years. From the point of view of vitality, entrepreneurship should be an attainable and attractive option for an increasing number of young people. This sets challenges for the Finnish educational system. (Eskola, Niinikoski, Keränen, Muhos (2013). Yrittäjyyskasvatus Pohjois-Pohjanmaalla. Nykytila 2013).

The regional entrepreneurship education strategy coordinated by the Development of Entrepreneurship Education in North Ostrobothnia project specifies and supplements the objectives of entrepreneurship education defined in national curricula. It encourages all parties concerned to fulfil the 2040 objective set in the regional plan: North Ostrobothnia is a skilled, international and vital entrepreneurship region, with Oulu, the largest centre in the north, leading the way. North Ostrobothnia is a region of wellbeing, a high-quality living environment and diverse nature.

When developing an entrepreneurship culture, it is important to engage the entire working community. It is important to discuss and plan together what kinds of ways would be needed to improve an entrepreneurship culture in the working community what existing functions should be preserved and what should be changed, where do we want to go. Building an entrepreneurship culture is the mutual task of directors of educational organisations, employees, partners and students. In Not Ostrobothnia a project "Development of entrepreneurship education in North Ostrobothnia (PoPYk) started in 2015. The projects´goals are to achieve a shared view in the province of entrepreneurship education, creating an entrepreneurship education strategy and operating model for North Ostrobothnia. (Nuoret tekevät tulevaisuuden (2016). Pohjois-Pohjanmaan yrittäjyyskasvatuksen strategia.).

Also adapting general policies with the practical work of educational establishments and establishing a shared material bank to share good entrepreneurship education models and practices. Promoting versatile entrepreneurship education expertise and securing continuity of entrepreneurship education support functions.

North Ostrobothnia offers an operating environment giving encouragement to experiments, cooperation, entrepreneurship and the creation of new business. Entrepreneurship education is reflected in the strategies, curricula, annual plans and practical work of educational organisations. Employees of educational organisations are developing their entrepreneurial and working life skills based on targets and work with companies to improve the employment opportunities of students. (Nuoret tekevät tulevaisuuden (2016). Pohjois-Pohjanmaan yrittäjyyskasvatuksen strategia ja toimintaohjelma 2016-20120).

Organisations offering corporate services support cooperation between students and working life for learning at work, thesis work and project assignments.

The home town is an attractive option for cooperation with working life during studies and for employment after graduation. Entrepreneurship is seen as a possible career option after graduation. Entrepreneurship education networks have a stabilised role in regional development and the development of cooperation with educational establishments. Support services for entrepreneurship education are organised as part of provincial development. The education and research cooperation team of the Council of Oulu Region approved the entrepreneurship education strategy at its meeting on 28 January 2016. The cooperation team will annually monitor and evaluate the fulfilment of the strategy and action plan.

Implementation of strategy is done by the participatory method. In provincial level the education and research cooperation team of the Council of Oulu Region supervises the strategy work. At the regional level there are three regional teams, involving members of the teaching staff, entrepreneur associations, other entrepreneurship education parties and implementing project parties. Discussions are held between separate participating organisations communicated to regional teams via participants. At the municipal level the project involves other implementing parties from all educational levels, also including teacher education establishments of the university and vocational institutes.

The most important goal is to strengthen entrepreneurial and working life skills of students. According to strategy each student meets entrepreneurship as part of studies. Building a study path is based on the identification of personal strengths and weaknesses. Each student is able to develop and practise their entrepreneurial and working life skills as part of is studies. After graduating, students possess the entrepreneurial and working life readiness required by the changing environment. Students work on their entrepreneurial and working life skills throughout their study paths. Personal strengths, projects and learning are highlighted using different learning platforms (Nuoret tekevät tulevaisuuden (2016), Pohjois-Pohjanmaan yrittäjyyskasvatuksen strategia.).

Students are guided to make bold experiments while succeeding together. Students guide their individual activities, bear their responsibility for the completion of learning projects and understand the impact of their actions on society. Companies, entrepreneur associations and other entrepreneurship education partners are actively implementing and developing entrepreneurship education.

Members of the teaching staff and entrepreneurship education partners are familiar with and utilise functional learning environments in entrepreneurship education. The skills of teachers in entrepreneurship education methods and their expertise in of entrepreneurship and business are developed using specific targets. Entrepreneurship learning environments and teaching methods support one another, giving students options in entrepreneurship education.

At the Upper secondary vocational education Entrepreneurship education encourages students to acquire the skills required in entrepreneurship and to act in an entrepreneurial way. Entrepreneurship education is reflected in teaching methods, learning at work and learning environments. At universities of applied sciences, every student meets entrepreneurship as a phenomenon and part of their studies. Entrepreneurship education emphasises the extensive development of the readiness to become an entrepreneur.

At universities of applied sciences, the opportunities offered by the creation of new business and the commercialisation of ideas are particularly taken into account. Students see entrepreneurship as a potential career option. At the univesities Entrepreneurship education helps individuals to review their expertise and creates change through people who want to leave their mark on the world. Adopting an entrepreneurial way of acting provides students with means to succeed in their future careers. Growing into an entrepreneur requires that an entrepreneurial identity is built and business expertise is developed. (Nuoret tekevät tulevaisuuden (2016). Pohjois-Pohjanmaan yrittäjyyskasvatuksen strategia.).

An active partner in entrepreneurship education acts as a partner for educational organisations in the implementation of entrepreneurship education. Offers current information about entrepreneurship and working life for educational organisations. Enables genuine customer-oriented learning situations. Engages in the development of learning environments for entrepreneurship education.

A good leader enables the building of an entrepreneurship culture and brings about new experiments and network cooperation as parts of everyday life. Changes learning environments and methods for entrepreneurship education and reserves resources for mutual development. A good leader takes care of a positive atmosphere and the development of the personnel's competence.

A motivated student bears responsibility for their learning and acquired competence, inspires and encourages their friends to work together. Is an active member of their team, community and partnership network. A student engages in the development of learning environments for entrepreneurship education, and helps to build a positive atmosphere. He tests and experiments, builds future based on goals and targets.

An encouraging teachers and other employees build an entrepreneurship culture by testing new entrepreneurship education models and new forms of cooperation. Engages in the development of learning environments and methods, and utilise them when teaching. Acquires current information about working life and, if required, updates their knowledge of entrepreneurship education.

Takes care of a positive and encouraging atmosphere. Encourages students to build their future based on targets. Works with companies, working life and other educational establishments.

10.2. ANALYSIS OF TEACHING METHODS IN VOCATIONAL

10.2.1. Competences in working life –link between vocational education at the level of secondary education and the level of higher education

Investing in education has been a means to prosper as a nation for Finland. The development of the vocational education and training track dates back to the vocational education reforms which took place in the 1990s. In Finland, vocational education covers vocational upper secondary, further and specialist qualifications as well as university of applied sciences bachelor's and master's programs. (Laki ammatillisesta peruskoulutuksesta 630/1998).

The first opportunity to choose the applied learning track is in the ninth grade, when students apply to upper secondary level studies through a centralized application system. The 2015 statistcs from the Finnish National Board of Education show, that currently over 50% of the age cohort choose the vocational track as a first choice. Today entry is on a competitive basis, as not all students gain access to their first choice program. The wide range of opportunities to continue studies after the upper secondary vocational track is what differentiates the Finnish system from that of many of its European counterparts. All secondary education gualifies for higher education (www.oph.fi).

The vocational education and training (VET) track offers over 360 qualifications equivalent to EQF levels four and five. The further and specialist qualifications are regarded as professional level studies, upgrading the workforce. The wide range of programs is also open to graduates of UAS's or universities. (Laki ammatillisesta peruskoulutuksesta 632/1998).

Some of the most important policy decisions affecting the Finnish vocational education and training sector have been establishment of the Universities of Applied Sciences in 1991. There are now a total of 24 UASs in Finland. Vocational education is now strongly linked to Universities of Applied sciences. (ammattikorkeakoululaksi 932/2014).

The establishment of the competency-based adult education system in 1994, introducing life long learning paths supporting career planning and making it possible for those lacking qualifications, to benefit from possible work experience through the process of recognition of prior learning. Another important step was 1998 statute on vocational education and training teacher competences (www.oph.fi).

In 1999 – 2001 vocational curriculum reform was made. It improved access to higher education from upper secondary vocational programs. The August 2015 curriculum reform enhancing work-based learning and competence, transforming the previous 120 credit three-year programs to 180 competence point qualifications and dissolveing direct linkages between progress in studies and time spent on studies.

Cooperation between higher education institutions and business life will be strengthened to bring innovations to the market The goal is to use the resources of science and research in a more efficient and effective way and to promote the growth of Finnish education exports. Enhancing research aims to contribute to new growth to Finland. The division of work and cooperation between higher education institutions and research institutions will be made clearer. Higher education institutions will clarify their profiles, focusing on the top of international research potential. The profiling and work division of higher education institutions, as well as the impact and commercialisation of research, will be made more effective. The portion of com-

petitive funding will be increased in the financing of higher education institutions. (Finland, a land of solutions (2015). Strategic programme of Prime Minister Juha Sipilä´s government).

Every university and university of applied sciences has its own Profile. One important task is to serve the needs of small and medium sized enterprises throug innovation developement through experiments, demonstrations and pilots utilizing smart specialisation. The significance of micro sized enterprises (less than 10 employees) representing 93,4 % of enterprises in Finland is vital for developing new jobs. In recent years 40 % of the new jobs were created by micro enterprises. (www.stat.fi).

The government also hopes to achieve longer work careers and flexible study paths for higher education. Higher education institutions will reform their student selection processes in order to decrease the number of gap years after upper secondary education and to encourage students to begin their studies earlier. The intention is to increase the significance of matriculation examination results in student selections. In the future, higher education institutions will offer education around the year. Emphasising a student-centered approach will also speed up studies. In addition, recognition of prior learning will be improved, and work life orientation and teaching of entrepreneurial skills will be increased.

The use of electronic devices as teaching aids is already well established at Finnish higher education institutions, but there is plenty of work to be done in taking further advantage of digitalisation and in developing the competence of teaching staff in digitalisation. Digitalisation enables increasing the flexibility of study paths and facilitates more cooperation between higher education institutions and with secondary education institutions.

Today's societies place challenging demands on individuals, who are confronted with complexity in many parts of their lives. Defining important competencies can improve assessments of how well prepared young people and adults are for life's challenges, as well as identify overarching goals for education systems and lifelong learning. A competency is more than just knowledge and skills.

10.2.2. Reform of Finnish Vocational Education

The reform updates the entire vocational education and training (VET) by 2018. In the future, work life requires a new kind of competence, while there are fewer financial resources available for education. VET has to respond more swiftly to the changes in work life and operating environment and to adapt to individual competence needs.

VET for young people and adults will be consolidated, forming a single entity with its own steering and regulation system and financing model. The current supply-oriented approach will be refocused into a demand-driven approach. Education will be competencebased and customer-oriented: Each student will be offered the possibility to design an individually appropriate path to finishing an entire qualification or a supplementary skill set. The primary importance is on what the student learns and is able to do.

Digital learning environments and new approaches to pedagogy (e.g. modern simulators) will have a larger role in the future of learning. Learning in the workplace will be increased.

In Finland an authorisation to provide education is required. In the future, education is regulated through a single authorisation license, and education providers will have increased freedom in organising their activities.

The reform includes examining the education provider network. VET will be available throughout the country in the future as well. The ministry will ensure that all education providers have sufficient professional and financial resources to provide education. Education providers are encouraged towards voluntary mergers.

There are up to 370 different vocational qualifications available in Finland. In the future, the number of qualifications will decrease, and qualification content will be broadened. This supports designing individual study paths and enables more rapid responses to the changing competence needs in work life.

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11. PRACTICAL TEACHING OF STUDENTS IN SLOVAKIA AND ANALYSIS OF SELECTED TEACHING METHODS OF TRANSVERSAL COMPETENCES

Kamila BORSEKOVÁ, Vanda MARÁKOVÁ, Anna VAŇOVÁ, Katarína VITÁLIŠOVÁ

11.1. Slovak experiences in practical teaching methods applied in higher education

Practical methods allow students through specific activities strengthen their knowledge. Some authors speak in this context about "active learning" or "learning through experience" (Petlák, 1997). Practical methods generally emphasize activity of students and interconnect learning process with practical life. A common feature of these activities is a considerable degree of autonomy and interest from the side of students. Proper application of practical teaching method allows the teacher to act on the whole personality of student. Own direct observation, problem solving, and independent work of a practical nature, largely contributes to the quality of future careers, participation and inclusion into practice (Grecmanová, 1999).

The process of acquiring transversal competences through practical teaching needs to be in a good quality, with adequate work organization of individuals and working groups with reduction of routine activities.

Although many universities and higher education institution declare the importance of practical teaching methods there is no specific law or regulation that gives a legislative framework of practical teaching in higher education. Universities and higher education institutions are responsible for their curricula, organization of study as well as for division between theoretical and practical teaching. Practical teaching may help students and later alumni to find better job position. Quality of education, knowledge and skills gained through practical and theoretical learning play an important role in the process of introduction into practice of alumni. Therefore, it is important to access the quality of the higher education through the optic of study programme alumni. We refer to the results of the field research conducted in the representative sample of 2 383 alumni during the year 2013. The research sample was consisting of students, finalizing their studies in 2010. The respondents were asked to perform they feedback on two areas. First one was oriented towards the relationship between the theoretical and practical teaching methods. In the second one they were asked to evaluate in the Likert scale from 1 to 5 overall quality of the study program they have concluded confronting their working life experience since their graduation.

Often prevailing theoretical over practical teaching during the higher education is criticized by students. The framework of the disproportion is weak relations between the academic world and the business sector. The research outcomes proved that this issue is sensitive for the higher education alumni as well.

Your education was:	Alumni (relative portion in %)
Oriented closely on the practice	0,5
The theoretical and practical aspects were well balanced	21,3
Oriented too theoretically	65,9
I cannot assess	11,6
No response	0,7
Total	100,0

Table 11.1. Proportion of theoretical and practical teaching methods according to the alumni. Source: ACADEMIA, 2015

The lack of practical teaching methods was confirmed by alumni of all selected study fields (natural sciences, technical sciences, agricultural and forestry, veterinary, health and social sciences, services). From the research sample the most intensively the imbalance was evaluated by the graduates of social sciences (more than 78 %). There were no data available as far as the attitudes of graduates from the Academies of Art and Academy of Army and Academy of Science.

According to Petnuchova (2012, p. 623) „the Slovak Republic currently does not have legislation in place to support validation of non-formal or informal learning. It does not have a National Qualification Framework which is capable of recognizing formal, non-formal or informal learning, collectively. The country does not have any national experience of developing methods or "tools" to validate non-formal or informal learning and does not have the necessary quality assurance systems in place to ensure the quality of non-formal or informal learning".

Appropriate teaching methods, which are in accordance with proclaimed goals of study programs and final competencies which should be reached by graduates, are necessary for the final reform and for creation of well-educated experts in particular field with appropriate knowledge, skills and competences (Borseková et al. 2016, pp. 69-71).

Although practical teaching methods are not supported by legislation in higher education yet, it is possible to find several good examples of well working practical teaching methods in Slovakia. Many study programs and specialization including practical teaching within courses, lectures or seminars.

During the study of medicine, students are attending many courses that are based on practical teaching. One of the best medical universities in Slovakia, Jessenius Faculty of Medicine in Martin, defines in its Guide of Study for 2015/2016 educational activities as lectures, seminars, practicals, final thesis, project work, laboratory works, internships, excursion, professional practice, state examination and their combination. Lectures are usually given by professors and associate professors. Content of lectures is a subject of curriculum and supplements content of textbooks. Seminars are aimed at methodological development and deepening the lectured part of the subject and explanation of new scientific knowledge. Practical trainings are aimed at purposive training, strengthening and deepening of knowledge, skills and habits of a student needed for practical and theoretical completion of a subject. The aim of tutorials is to direct students within the content and methods of study, methodology of scientific, research and professional activities. Tutorials may replace some forms of teaching or supplement preparation of students for examinations. Besides practical teaching methods used for different courses, students of medicine are obliged to attend professional practice and compulsory summer practice. Professional practice is aimed at strengthening the knowledge and skills and their verification in practice, as well as at acquiring new knowledge. Compulsory summer practice for students is carried out during summer holidays. Each student personally applies for a possibility and time period to carry out summer practice in particular healthcare facility according to the study plan of given year of study. Passing summer practice is prerequisite for completing the study of medicine (Study Program, Academic Year 2015/2016, p. 83-85). Study of medicine in Slovakia, is probably the most effective study that is preparing students for their future profession. Although, study of medicine is very specific, its practical orientation can be an example for other study programs.

11.2. Practical teaching methods applied in higher education – UMB experience

Following part of the chapter is devoted to practical teaching methods in higher education with concrete experience and implementation of practical teaching methods at Matej Bel University in Slovakia.

Service learning at Matej Bel University
Volunteering of students is at Matej Bel University in Banská Bystrica developed for more than ten years. The aim is not only to increase the involvement of students into volunteer activities during their university studies, but also to apply their experience in education and to develop in them a commitment to social responsibility, which they would be able to transfer to future professional practice. Since the academic year 2005/2006 voluntary activities are included in selected disciplines as alternative activities in the subjects under the concept of service learning.

Since 2013, within the project Development of innovative forms of education at Matej Bel University in Banská Bystrica supported from the European Union shall incorporate, at Matej Bel University in Banská Bystrica service learning strategy across multiple models and subjects. Service learning strategy is applied within three subjects.

The first subject "The third sector and NGOs" continue to apply service learning and based on experience and reflection of students gained in the previous period. Within the scope and content of second subject, "Methodology of human sciences" we apply service learning for the first time. The new, two-semester subject, "Service learning" comprehensively responds to a number of identified needs and preferences of students.

In all three cases, at the beginning of the academic year, students get familiar with the aim of the subject, content and its scoring system. Part of the subject is implemented as a specific activity in the community. In the case that student does not want to participate in community activity, it has the ability to make the substitute work (except subject "Service learning" where community activity is obligatory). To offer specific activities in the community, we choose several options:

- form and realization of activities are planned in advance with the organizations,
- community activities respond to the needs of organizations that were approached for cooperation, but its form and method of implementation is determined by the students;
- activities are planned by students based on their survey carried out in community and reflect needs of the community chosen.

Experience from service learning shows that this concept of education help students to prepare for practice and, ultimately, to a variety of life situations (Brozmanová Gregorová et al. 2015).

Practical teaching methods in non-formal learning
At the Matej Bel University is working the Centre for life-long learning which is open to wide public. For many years, Matej Bel University creates space for additional education and training, which follow up on school education, and offer the possibility to receive partial or full qualification or amend, renew, extend, deepen the skills acquired in school education or to satisfy various kinds of interests. At present, following courses in three basic areas are open for wide public:

1. In the area of Management, marketing and business:
   - Development of management skills for managers;
   - Project thinking for everyone;

- Establishment and management of civil society organizations;
- Leadership;
- Administrative minimum for local and regional government;
- Corporate culture and ethics;
- Project management of non-profit organizations.

2. In the area of foreign languages:
- Business English;
- Business German;
- How to understand a foreign language without learning;
- Business Banking English;
- Academic English;
- Administrative English;
- How to handle a job interview in German.

3. In the area of Career and personal development
- How to write good CV and cover letter;
- How to become successful at a job interview;
- Communication and presentation skills;
- Soft skills - training (three-module training).

Following courses are completely new developed and offered to wide public from the summer semester 2015-2016
- The road to the profession - experiential workshop for career guidance;
- Business financial planning;
- Time management;
- Socio-psychological training;
- How to handle a job interview in English.

Other possibility is to take a part on internship home or abroad in the business sector or third sector. At the web pages of faculties, current information and offers of internship from companies and institutions are available for all students. For example, currently is offered Internship in regional tourism organizations. Internship is an excellent opportunity to gain work experience, deepening the theoretical knowledge and practical skill in destination management, marketing and PR in the organization of tourism. Students take part on the activities of organization and are involved in the development of the activities and performance of tasks. Part of internships is also participating in events co-organized by the organization and presentation of tourist offer of the region of Bratislava (Slovakia and abroad) (Borseková et al. 2016, pp. 72-73).

Practical teaching methods in informal learning

Students at the Matej Bel University have the possibility to attend any course they are interested without additional payment. Students and wide public have the possibility to attend specific lectures, discussions, courses, workshops and seminars with practitioners organized on faculties and information about all events are spread among students and employees and are generally accessible via web page. These events are not a part of some specific subject but they are organized with aim to bring into education more practice and to deliver to students and wide public interesting and inspiring business stories. For example in March 2016, at the Faculty of Economics it was organized public discussion with the owner and CEO of Student Agency and RegioJet – innovative and modern company in the area of public transport (Borseková et al. 2016, p. 73).

11.3. The analysis of transversal competences' teaching methods in higher education – Slovak experiences

In the Slovak Republic absents the conceptual approach to development of transversal skills in practice what influence also the using of transversal competences' teaching methods in higher education. Even if the strategic object in education defined by the Ministry of Education declare that the university graduates will meet the requirements of the employers including the flexibility, ability to identify and solve the problems, social interaction and communication, there is still a low level of information about the real developing transversal skills in higher education institutions in Slovakia (Long-term objectives in the education, research, art and other creative activity in the academic sphere till 2014, Ministry of Education). Nowadays, there also absent some comprehensive analysis of the current situation in this field in academic sphere in the Slovak Republic. To analyse the current situation in transversal competence's teaching methods in higher education we refer to results of partial researches realized during last years at the universities oriented at selected aspects of the research issues.

The first selected material is a Youth Report. Situation analysis of the youth life quality in the Slovak Republic (2014) prepared by IUVENTA, Slovak Institute of Youth. It summarizes the results of realized researches with orientation at the youth and university graduates. Youth Report 2014 is the second complex material presented by the current life of young people in Slovakia. It follows the Youth Report 2010 and allows comparing the development of the situation and living conditions of young people in various areas. It is a comprehensive document, which monitors various aspects of life of young people in the Slovak Republic, informing about the real situation and current challenges in specific areas of policy towards youth.

The second material is a report - Enforcement of university graduates at the labour market (2012) financed by the National agency of Life-long learning education/Erasmus. The research includes the assessment analysis of theoretical and practical training of students in terms of their preparedness for the labour market, identification of the level of generic competences; the assessment of the education compliance and labour market requirements; analysing the rate of utilization of the knowledge of university study in practice; identification of strengths and weaknesses in the training of graduates and their placement in the labour market characterization the structural disproportion between the supply of graduates in various fields of study and labour market demand; monitoring the mobility in the labour market after graduation; the impact of Erasmus mobility of students for employability and provide useful information about the success rate of young people's transition from education into work.

The third sources of information are the websites of the Slovak universities that published the official information about the study programs and especially about the courses, used teaching methods and evaluation process including the interim and final evaluation within these courses.

Because of the European Union initiative to reform the higher education system and also giving the priority to the digital, societal and citizen competences of students in new programming period of EU, there has appeared first official activity oriented at mapping and analysing the transversal skills at the national level. It is a research realized by the Ministry of Education during the first half of year 2016 oriented at mapping the level of incorporating the development of digital skills; social and citizen competences, the entrepreneurial competencies into the courses of new accredited study programs within the universities in Slovakia. The research is a part of preparation process for the new programming period of the European Union within the European Social Fund, in Slovak conditions – Operating programme Human Resources, in

2014-2020. However, the analysis of the study programmes at the Slovak universities is voluntary, depend on the decision of the university management and that is why there can be doubt about the relevance of the research results (Borseková et al. 2016, pp. 112-113).

Within life-long learning program at Matej Bel University in Slovakia, it is possible to attend the special course – training program "Soft skills". The main objective of training program is to learn the key soft skills that help in professional and personal life. Training program is focused on communication with different types of people, creativity, conflict resolution, stress management and body language. The training program is divided into 3 main parts: communication, assertiveness and conflict resolution that are described as following:

Effective Communication - communication skills are one of the basic prerequisites for success in employment, good relations in the workplace, as well as satisfaction and happiness in the private life. In everyday situations, we need to communicate verbally and non-verbally with customers, colleagues, superiors, family or friends. Through effective communication we can improve our work as well as quality of life.

Assertiveness is the way of human behaviour through which is possible actively prevents tampering with ourselves by other people. Acquired ability of assertiveness uncover manipulation techniques that people can use against us. Development of active application of assertive rights and exploitation of principles and techniques which can improve professional but also personal life.

Conflict Resolution – in the last part of the training program you will gain an overview of the different ways of dealing with conflict and most common mistakes that tend to lead to the deepening of conflicts and not their solution. You can learn techniques of effective conflict resolution in the workplace and in personal life (available at https://www.umb.sk/celozivotne-vzdelavanieumb/referatcelozivotneho-vzdelavania/kurzy-pre-vsetkych/treningove-programy/soft-skills.html, cited 12 October 2016).

11.3.1. Developing of the entrepreneurship in higher education

In the years 2013 and 2014 it was realised the project "Employability in practice" by the Institute of Information and Prognosis of Education (from 2014 the Centre of Scientific and Technical Information). The project consisted of two main blocks. In the first were involved graduates of Slovak Universities, who successfully completed their university education (2nd stage) in 2010. They were invited to evaluate after some time the quality of education in relation to their employability at the labour market. The second block focused on the issue of preparedness of graduates from the perspective of employers. The main focus was on assessment of the quality of training at universities in terms of employer's needs. According to results of this survey realised among students of Slovak universities in 2013 the preparation for business was the worst evaluated skills gained during the study, 47.6% of students evaluated preparation for business during their study as very bad, as bad or very bad was evaluated by 72.7.% of students. Only 9.9% students evaluated the preparation for business as positive during their study.

The European Commission carried out a survey "Entrepreneurship in the EU and beyond", which involved more than 42,000 respondents aged over 15 years, of which 1000 respondents from Slovakia. According to results of the survey, only third of Slovakian inhabitants (33 %) prefer to become entrepreneurs instead of to be employed, which is 4% lower than the EU av-

erage (2012). One of the reasons should be the level of developing entrepreneurship in higher education.

At the present, it is expecting from the university the direct meeting of society needs by preparation of graduates to specific issues, solving problems stemming directly from the practice. The Concept of Development of Higher Education in Slovakia already considered the cooperation between universities and practices as the third the most important activity of universities and colleges (beside education and research). This cooperation should be reflected by provision of additional education with regard to labour market, taking into account labour market needs by updating curricula, activities oriented on the cooperation with business and third sector, consultation and advisory services for students and also independent analysis and models for state/public sector.

Universities play in knowledge society wide range of different tasks. Through education they offer creation of human capital and intellectual wealth. Their importance for regional development is undeniable as they serve as a source of regional innovation and growth based on technology, this greatly contributing to the economic development of the regions. Universities are important disseminators of knowledge and results of their scientific and research activities that are used by private companies but also by the whole society. In recent years, universities in Slovakia pay more attention to applied research that is more relevant for business and universities also provide technical support and specific expertise and equipment for research activities in companies. It is also partially influenced by the changing situation in the sector of higher education in Slovakia in the matter of financial subsidies to universities that cooperate closely with entrepreneurs and practice. Improvement and development in cooperation with entrepreneurs and practice belong to one of the biggest challenges of universities in Slovakia. This challenge includes:

– development of long-term relationship between companies and academic researchers and direct participation of universities in commercial research, which support the idea that public investment in research should have a measurable economic return,
– emphasis on lifelong learning,
– new forms of knowledge and skills (transversal competences, e-learning, distance education), and others.

The current system of higher education in Slovakia, and universities as part of this system, are not fully able to prepare their graduates for entrepreneurship. Although part of study program involves subjects, that are useful for entrepreneurship, it still lacks some additional value that would give students and graduates some overview and ability to use and apply gained knowledge and skills.

Companies and entrepreneurships in Slovakia complain that the barrier to collaboration with universities is in particular the reluctance of schools and universities to upgrade outdated curriculum. Mostly they are dissatisfied with the quality and availability of graduates. In more than 56 % entrepreneurs presents cases that availability of graduates with necessary qualification is low or relevant study program even do not exist. The quality of graduates is considered by entrepreneurs rather inadequate of totally inadequate in 58% of cases. The good news is that almost third of companies are trying to influence, or in past tried to influence education, to fit better to their needs. From those, who tried, more than 80% was successful.

Although there is no direct coordination or framework for development of entrepreneurships skills from the national level yet, several universities are using methods for development of

these competences. In the following part we will introduce the most using forms with concrete examples from the Faculty of Economics, Matej Bel University in year 2015:

– *Internships and practical training* of students in enterprises are very common and in many study programs with economic orientation even obligatory. Within several programs (for example Tourism) at the Faculty of Economics internship or practical training is obligatory in duration of half year and preferred to be done abroad.

– *Presentation of entrepreneurs* as a positive motivation for students. Positive and inspiring stories and positive personality models attract and motivate for future carrier. In 2015 more than 20 presentations of entrepreneurs and their inspiring stories were involved in the list of events at the Faculty of Economics in Matej Bel University. One of the most inspiring was personal story: How to become in 35 years a portfolio manager responsible for the management of almost 2 billion euros in Slovakia.

– *Excursion to enterprises and organizations* that might be future employers of students, especially in the region where the university is located. As an example we can mention the excursion organised to the company TATRAMAT in Poprad, where Faculty of Economics has the branch. The company presented its product portfolio – water heaters, quality management system and production process. The main aim was to present the interconnection between science and practice.

– *Discussions with entrepreneurs* as a part of positive motivation and stimulation to future activity (the acquisition of knowledge, open communication). Very good example was the discussion with businessman Peter Krištofovič. He founded and built the largest consulting company in Slovakia – Slave Group which expanded to Ukraine, Czech Republic, Romania and Russia. In the international business he enforced also as a co-owner of a large private equity company Arca Capital, which is oriented on new investment opportunities in Central and Eastern Europe.

– *Workshops and seminars with different topics* (marketing, social networks, business, international business etc.) – practical experience. Investigation of strengths and weaknesses and motivation to remove them by additional study or training. For example in 2015 was organised the lecture with practical workshop "What are the requirements and expectations of employers in the field of hospitality and tourism in the selection of its employees?" with the director of the biggest spa resort Hotel & Spa Resort Kaskády in Banská Bystrica.

– *The trainings of soft skills* (business, communication, presentation skills, team work) that are needed not only in entrepreneurship. Very good example of such training was the event "Discover your strengths" by Jan Mühlfeit who worked 21 years as one of the most successful top managers at Microsoft and advised also to Bill Gates. He is a global strategist, coach and mentor. Based on its experience developed a unique methodology to work with strengths and talents.

As a very positive example and inspiration for other universities in Slovakia we can mention the two-semester university-wide subject "The profession entrepreneur". This subject develops creative thinking, communication, business and organization skills. Within the subject students cooperate with mentors, and during the transformation of business idea into the real product or service, gain important experience usable in their future carriers. The subject is realised in Technical University of Žilina, began in 2009 and altogether more than 80 events was organized within the subject – meeting with successful entrepreneurs, discussions and workshops. Students were already working on more than 40 business ideas and received more than 750 hours of mentoring.

In recent year it was created several national and local/regional initiatives that are helping to create start-ups. In many cases, informal groups and various civic associations began with re-

alisation of events, very popular in abroad, aimed on promotion of youth entrepreneurship – Start-up Weekend, StartUpLive etc. Several of these initiatives cooperate with universities. A good example is an organization Eastcubator with headquarters in Košice, closely cooperating with Technical University of Košice and their students.

National Agency for Development of Small and Medium Enterprises has introduced in 2009 the support program "Support of successful business practice and education for entrepreneurship". Mainly activities aimed at improving the perception of entrepreneurs and entrepreneurship as an alternative to employment were carried out.

In 2010 in Slovakia was created the first organization that start systematically supports entrepreneurship of young people – The Association of Young Entrepreneurs. To inspire young people to entrepreneurship and to enhance business by promoting positive business model belong to main objectives of association. At the same time, association cooperates with junior Achievement Slovakia which results to the presentation of successful entrepreneurship models of young people, particularly students.

We highly recommend universities to cooperate more wide with entrepreneurs and associations supporting entrepreneurs and start-ups and vice-versa to improve and strengthen the development of entrepreneurship in higher education (Borseková et al. 2016, pp. 113-116.).

11.3.2. Developing of the communicativeness in higher education

According to results of the project "Employability in practice" training in communicativeness and presentation skills, graduates evaluated quite favourable. Positive it was rated by 36.9 % of graduates and negative it was evaluated by 32.8% of graduates. External students evaluated it even positively, by 40.9 % of graduates. The results of this survey show the following table 11.2.

Training in investigated areas:	Form of study	Very bad	Bad	Neutral	Good	Very good	Average
Law and Legislation	Daily students	25.7	28.2	25.7	13.9	6.5	2,50
	External students	12.6	19.2	34.2	22.5	11.5	2,90
Communicativeness and present. skills	Daily students	11.8	21	30.3	24.4	12.5	3,00
	External students	8.6	16.4	34.1	25.7	15.2	3,20
Management skills	Daily students	31.5	27.4	24.1	12.1	5.1	2,30
	External students	19.9	18.1	29.6	22.3	10.1	2,90
Entrepreneurship skills	Daily students	47.6	25.1	17.4	7.5	2.4	1,90
	External students	30.0	24.9	28.2	11.1	5.9	2,40

Table 11.2. Evaluation of training by students. Source: Srnáková 2014.

In evaluation of communicativeness of graduates among entrepreneurs prevails rather discontent. More than 35 % of entrepreneurs evaluated the communicativeness of graduates as weak, almost 20 % perceived it neutrally and more than 27 % of entrepreneurs evaluated communicativeness of graduates as good.

The same research was realized in 2008 and unfortunately the results from 2008 to 2013 didn´t improve in a positive way. The following table shows the comparison of the readiness rate in communication competence between the year 2008 and 2013.

The rate of readiness in %	2008	2013	Difference in percentage point
Well-prepared	13.2	2.2	-11
Prepared	40.6	28.7	-11,9
Average preparation	36.3	20.8	-15,5
Weak preparation	9.6	39.3	+29,7
Very low rate of preparation	0.3	9.1	+8,8

Table 11.3. Comparison of level of communicativeness in 2008 and 2013. Source: Janková, 2015.

According to survey realized in 2013, entrepreneurs were less satisfied with the level of communication competence in comparison with the year 2008. The results show that level of well-prepared graduates in communication declined by 11 % points, altogether the level of preparation in communicativeness decreased by almost 23%. These results are very alarming and are in contrast with the perception of graduates about the communications skills gaining during their study.

Communicativeness, the same as other transversal competences, is not included into curricula directly and there is no official framework for developing communicativeness in higher education. Nevertheless, many universities exploit different methods and tools for development of communicativeness. The most common method is education and communicativeness in foreign languages. At the Faculty of Economics at Matej Bel University, students have possibility to choose different foreign languages (beside the most common like English, German and French also Russian, Spanish and Italian) and it involves also communication in the chosen language. Students have also possibilities to reach the certificate in several foreign languages.

There are several subjects oriented directly on development of communication. All students of economic oriented study program at the Faculty of Economics have obligatory to pass the subject Societal and diplomatic protocol. The subject is aimed on acquiring knowledge about the basic categories of social behaviour and diplomatic protocol, to acquire and train the skills of proper behaviour and communication in various situations of work and social relations. Other subject related with development of communication is Human Resources Management with aim to obtain knowledge about human resources and use knowledge in practice, to train personal abilities and skills on communication and leading of employees. At the whole university of Matej Bel students have the possibility to choose the subject "Intercultural communication" in English, German, French or Russian language.

Besides a large number of events, few of them are also oriented on development of communication with experts from practice. In 2015 was organized at the Faculty of Economics, Matej Bel University the seminar "Life maps and types of communication suitable for a work in multicultural environment". The seminar was partially focused on the need of appropriate form of communication due to the different types of communication and different situation related with work in the intercultural environment.

In addition to specific subjects, workshops and seminars offered for students in several universities, we can find Intercultural communication as a separate study program in several Slovak universities. Sometimes intercultural communication is the core of the study program, in some case it is the study program combined with foreign language.

As the way how to develop communicativeness of graduates we should consider the new form of Graduation. Before, students defended their master thesis together with the exam from the subjects of their study field. From 2016 defence of the master thesis will be based on discussion and communication of student with colloquium about the thesis and proper answering of questions related with the topic of master thesis (Borseková et al. 2016, pp. 117-118).

11.3.3. Developing creativity in higher education

In the field of creativity it absents the framework and rules how and in which extend the creativity development should be implemented in teaching methods in the higher education in the Slovak Republic.

By the research „Entrepreneurship in the EU and beyond" realised by the European Commission also among 1000 university students in the Slovak Republic, missing creative entrepreneurial idea is the second greatest group of barriers in developing their potential business (Youth Report, 2014). More than quarter of respondents started their business without the evaluations of their business idea and that is why there usually more frequently overcome their first failure too. The results show that these respondents after first negative experiences, more often prepare the business plan before the start of new business. The research results indicate the possibility that the university education does not pay enough attention to developing creativity and the business spirit of young people. The research results also indicate that there is also an evident difference in scope of creativity development in the various study programmes at the universities.

By our own experience and research oriented at information letters of courses published at website of the universities with the economic oriented faculties (Faculty of Economics at Matej Bel University, Economic Faculty at the Technical University in Košice, University of Economics in Bratislava, Slovak Agriculture University) shows limited number of courses that are directly associated with the creativity. There can be found 3 courses - Development of creativity 1; Development of creativity 2 offered by the Department of Social Sciences at the Technical University in Košice and one course taught at the Faculty of Business Management, at the University of Economics in Bratislava. In Košice are students during courses educated in the theory of creativity, its utilization in organization, in problem areas in developing creative trainees, evaluation and critical thinking. The various methods are though from the theoretical and practical point of view, especially experiential educational methods, problem and project methods (e. g. brainstorming, brain writing, heuristics, the methods by Poly, by Adler, etc.). Other courses specifically oriented on creativity are offered usually by the faculties in human, social or pedagogic sciences. They used to be offered as an alternative course also for the students of economic faculties within the same university. The similar course is a part of curricula in the study programs at the Faculty of Business Management, at the University of Economics in Bratislava. The course Creative technics in management belongs to the offer of optional requirements. It is oriented at the theoretical knowledge about the creative technics and its application in the management.

The second aspect of creativity developing that can be researched is the implementation the methods of creativity developing within the courses in study programmes with economic orientation. The majority of them use for the evaluation two parts – the exam and the seminar work, or projects. This second part of evaluation is strongly associated with the development of the creativity in the business and economic area because the students have to interconnect

the theoretical knowledge and practical issues by application of various methodological and methodical apparatus.

By the deeper analysis of the course's information letters we identify as the most often using teaching methods applied in higher education with orientation at the creativity in the Slovak Republic the problem solving, activating and practical methods. They include: case study, problemsolving methods, brainstorming, project method, seminar, simulation (in the special area of business and finances). In some courses, also a field trip was introduced as a method used. The advantage is that the student can put their theoretical knowledge directly into practice. Field trips can range from one-day sessions to longer, more in-depth expeditions that allow exploring specific areas or learning particular techniques.

By the information letters of courses published at website of the universities with the economic oriented faculties the seminar papers, projects and its defence, and also the case studies are usually the part of interim evaluation. They create from 30-40% of final evaluation in the obligatory study courses in the study programs, from 40-70% of final evaluation in the alternative course and till 100% of final evaluation in the optional courses (Borseková et al. 2016, pp. 119-120).

11.3.4. Developing teamwork in higher education

In the field of teamwork competence the situation is very similar as the development of creativity competence. It absents the framework and rules how and in which the team work extend should be implemented in teaching methods in the higher education in the Slovak Republic.

Partially, we can identify data about the level of teamwork development at universities in research results of the project Enforcement of university graduates at the labour market (2012) financed by the National agency of Life-long learning education/Erasmus. The research was realised in April – May 2012 among 395 students in various study programs from 10 Slovak universities that were involved in the Erasmus internship. One of the research aims was to identify the level of student's competency in building the interpersonal relationships within the work team.

From whole group of respondents, 37 % respondents confirmed that they developed during the study the team work at the good level, 31 % respondents evaluated it as its weakness. The high level in this competence was evaluates by students of natural science (47 %), students of economics and agricultural study programs (41 %). The lowest level was achieved by the students of technical study programs (39 %) and humanity and social sciences (33 %).

From 100 respondents, students of economics (6 universities), one third of students evaluate its ability to work in team as average, 28 % of the students as very good, 13 % of students as excellent. One quarter of respondents evaluated this competence as very weak or inadequate.

By our own experience, secondary research of the published information letters of the courses at the website of universities with the economic oriented faculties (e. g. Faculty of Economics at Matej Bel University, Economic Faculty at the Technical University in Košice, University of Economics in Bratislava, Slovak Agriculture University) in the curricula of the study programs with the economic orientation there appears only 2 courses that are specially devoted to the team work. One of these courses is offered by Department of social sciences at the Technical University in Košice. The course provides to students the basic knowledge of the working group stages of its formation and development groups; the constitution of a group structure, defining

the team roles and specifics of the management team; team procedures (communication in the team, group problem solving, decision making in a group conflicts in the team). To turn the theory into the practice the student has to prepare and present the seminar paper as a 40% of course evaluation. The second identified course Team work is offered by the University of P. J. Šafarik, Faculty of Philosophy in Košice. It can be selected by the students as an optional course for all study programs at the university.

More often, the faculties with the economic orientation include the partial aspects of team work from the theoretical and practical point of view into the courses about the human resources management, personal management, psychology or sociology. E. g. at the Faculty of Economics UMB can be identified a few courses where are included various aspects of team work - Partnerships and communication in the regional development as an alternative course; Management psychology as an optional course, Human resources management as an obligatory course. The situation is similar also at other economic faculties in the Slovak Republic.

By analysis of course's information letters at the faculties, to the most often using teaching methods applied in higher education with orientation at the team work in the Slovak Republic belong problem solving, activating and practical methods. They include problem-solving methods, case study, and project and seminar methods. The student's outputs of method's application (seminar papers, project, solutions of case studies etc.) are usually a part of interim or final evaluation in course (Borseková et al. 2016, pp. 120-121).

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12. PRACTICAL TEACHING OF STUDENTS IN SLOVENIA AND ANALYSIS OF TEACHING METHODS OF TRANSVERSAL COMPETENCES

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12.1. Practical teaching of students in Slovenia

Practical teaching of students influences their competences and their ability to use gained competences in their work. In practice, several transversal competences are needed and students may gain them through the use of different practical teaching methods during their studies. In this chapter, we research practical teaching of students and teaching methods to teach transversal competences from Slovenian perspective. First, we describe practical teaching methods applied in formal learning in higher education in Slovenia. After a literature review of the existing research, we introduce our survey which was carried out on the topics concerned. Next, we introduce 15 most frequently used practical teaching methods in formal learning in higher education based on students' experience and explain an example of using diverse practical teaching methods in practical classes within a business subject at the University of Maribor, the Faculty of Economics and Business (UM FEB). Further, this chapter introduces the analysis of teaching methods of transversal competences in Slovenia. We present how entrepreneurship, communicativeness, creativity and teamwork are thought at the Faculty of Economics and Business, the University of Maribor. For this purpose, various classes at the under- as well as post graduate study at the Faculty of Economics and Business, the University of Maribor are introduced as well as some propositions for improving the teaching process of transversal competences in Slovenia are given.

In Slovenia in 2013 (OECD, 2016) public expenditure on primary to tertiary education was 4.5% of GDP (gross domestic product), close to the OECD and EU22 average of 4.7%. Management, organization, and funding policies are devised mainly by the central education authorities and the education system is mainly organized as a public service, meaning public funds are highly centralised. Although Slovenia has a smaller share of adults with tertiary education than levels across the OECD and EU22, the share of young adults aged 25–34 that have achieved a tertiary-level education, is approaching the OECD and EU22 average.

In this chapter, we present the characteristics of practical teaching methods applied in formal learning in higher education in Slovenia, based on Belak et al. (2016a, pp. 75–86). In the research report published in 2012, Šarić and Košir (2012, p. 135) examine the extent and the ways of the inclusion of methods which promote active study in higher education in Slovenia. For this research, an online questionnaire was designed to investigate the approaches for the promotion of active learning which are used by teachers in Slovenian higher education institutions, the purpose of their application, the teachers' attributions for the (un)successful use of active methods, the teachers' needs for support in the implementation of active methods, and the ways in which these methods are included in the assessment process. 182 teachers in higher education participated in the research. The results showed that teachers most often activate students using conversation, followed by group work, task and problem solving, seminar papers and presentations. The participants attributed the successful use of active study methods mainly to the method itself, whereas the unsuccessful use was mostly attributed to the characteristics of students. Although the teachers' report gave only partial information about the instruction in higher education, the results of the research contribute to the knowledge about what is going on in Slovenian lecture rooms.

In 2011, a study about the propensity of students and teachers to study and e-learning methods in higher education was published (Sulčič, 2011). The study focused on the affection of teachers and students towards different teaching and learning methods used in higher education. It was found that teachers, despite the expectations of researchers, do not like conventional teaching methods too much. Interestingly, conventional methods were more attractive to students than to teachers. However, the survey confirmed that those students and teachers who are in favour of e-studies are not in favour of conventional teaching methods. According to this study, e-studies are an appropriate way to study for part-time students (Sulčič, 2011, p. 43). In Slovenia, education is either fully or partially delivered online for individual subjects. The study within the RIS project showed that, on average, 12% of higher education institutions used different online learning environments in the 2005/06 academic year (Vehovar et al., 2006 in ibid.). These learning environments were most frequently used in institutions in the field of business and economics (26%), and the least often in the field of medicine and health, social sciences and education (3%) and in the field of humanities (0%) (Vehovar et al., 2006, p. 35 in Sulčič, 2011, p. 44).

The authors surveyed students and teachers of business schools about their preferences regarding teaching and learning methods which are most frequently used in higher education. They used a 5-point scale (1 = the method is not appropriate, and 5 = the method is very appropriate). 137 students were included in the survey in the 2008/09 academic year (Sulčič, 2011, pp. 50–11). The researchers found that the acceptance of teaching and learning methods was as follows: students mostly liked communication with teachers via e-mail (4.0 points); the completion of computer-based tests (e-tests, colloquiums and exams) (3.7 points); traditional lectures ex cathedra, individual student work and pair-work (3.6 points), student work in small groups (3 to 6 students) and reading printed materials (books, scripts) (3.5 points). The least favourite methods were reading electronic materials from computer screens (3.0 points), audio recordings of lectures, oral exams at the end of lectures and role-playing (2.8 points), and students working in large groups (with more than 6 students) (2.6 points) (Sulčič, 2011, p. 52). Research has also shown that the use of active methods by Slovenian higher education teachers is often intuitive and non-reflective (Košir and Šarič, 2012 in Bardorfer, 2013, p. 112). This is most likely also true in the field of creating a favourable environment for learning and contact with students which is neglected in Slovenia (Bardorfer, 2013, p. 106; 112).

At the University of Maribor, the Faculty of Economics and Business (UM FEB), Slovenia (Belak et al., 2016a, pp.76–78), a survey was carried out on the topics concerned. 120 students of the last (third) year of professional undergraduate study stated 15 most frequently used practical teaching methods in formal learning in higher education based on their experience and opinions. They did not select laboratory work as a learning method, although some laboratory exercises (e.g. for economic research) are carried out. In this way, students solve problems, learn about new phenomena and form an independent view. At UM FEB (FEB being a well established Slovenian higher education institution) 15 most frequently used practical teaching methods in formal learning are: problem lectures, seminar papers, calculating tasks, problem solving, case studies, fieldwork, programmed learning, professional excursions, work placement study activities, teamwork, project work/method, educational simulation games (also role play/simulation), e-learning (known also as distance learning or e-learning) for employed students, workshops, and invited lectures by business professionals.

As an example of using diverse practical teaching methods in practical classes in a business subject at UM FEB, we describe the course 'Enterprise Policy and Strategic Management'. The course is delivered to the students of the last (third) year of professional undergraduate study

programme. We describe this example from the personal experiences viewpoint. Usually, practical teaching process in this subject starts with an empowering example with the aim to develop appropriate values, culture and ethics among students. In this subject, students learn how to make decisions as owners/governors and/or top managers of an enterprise or other organisation. To teach responsible values, appropriate culture and ethical attitudes, the teacher and the students first discuss their values, culture and ethics through stories with a moral lesson. A moral precept and the importance of moral behaviour for every person in the world are discussed. This is followed by a revision of essential theoretical starting points that are needed for work in the teaching process together with examples from practice. After that, the students are divided into an even number of groups and they receive their tasks. Each of the two groups which form a pair has the same task, but this task is different from the task of other 'two group pairs'. So students usually solve two or three different tasks (problems of two or three different enterprises). This, of course, depends on the number of groups (e.g. 4 groups – 2 tasks; 6 groups – 3 tasks). After they confirm that they understand their tasks, students use team work method to solve these tasks (Belak et al., 2016a, p.78).

When the time allocated for team work ends, students report their solutions to their colleagues. Since one of the aims of the subject 'Enterprise Policy and Strategic Management' is for students to learn how to make decisions as enterprise owners or top managers, the solution of each group solving the same task may be different although both can be correct. A higher mark is given to the group which gives a correct solution (i.e. the solution based on correct theoretical backgrounds transferred to a concrete example / task at hand), which must also be well justified (i.e. the students present better arguments). So the students have a group discussion about the solution found. The group discussion (or debate) is a method where participants mutually exchange ideas, discuss experimental results or plan new activities (Naji, 2016, p. 3). Discussion takes place according to the teacher's instructions and can proceed in unexpected ways. With a group discussion, participants develop the ability of management and critical thinking, and a sense of team work. It is very suitable for the changing of the attitudes through democratic dialogue (Belak et al., 2016a, pp.78–79).

12.2. Analysis of teaching methods of transversal competences in Slovenia

In this chapter, we present the analysis of teaching methods of transversal competences in Slovenia, based on Belak et al. (2016b, pp. 123–142). Mathematical Slovenia faces a number of challenges in the area of tertiary education (Čelebič, 2014). The participation in tertiary education is high but it is the use of human capital that represents a problem. The state should have more authority regarding the distribution of enrolment places in higher education. Enrolment in tertiary education should be more closely aligned with labour market needs. It is necessary to focus on measures that would increase employability of graduates. Further challenges include increasing expenditure on tertiary education, improving the quality of teaching and student performance, establishing a system for tracking graduates and measuring employers' satisfaction with graduate knowledge and skills. It is also necessary to strengthen university-business cooperation, include study-related work placements as part of study programmes and promote the acquisition of generic skills. It is necessary to focus on creating jobs for people with tertiary education and thus address another important challenge, the issue of brain drain.

The key transversal competences as knowledge, skills and competences needed on the labour market and in everyday life in Slovenia evolve rapidly (PIAAC, 2013). For society and the economy, insufficient transversal competences in the population reduce the prospects for innovation and growth. Considering the European Commission's cognitions (2014) in past few years,

Slovenia has increased its tertiary education attainment rate, which now stands above the EU average and already meets the national target for 2020. Mismatches between skills and the needs of the labour market persist and Slovenian education system needs to respond to demographic changes in Slovenia (i.e. Slovenia's shrinking and ageing population). The transition from education to the labour market in Slovenia is difficult even for higher education graduates (EC, 2014; Belak et. al., 2016b, pp. 123–142).

In Slovenia, a higher percentage of young people than is the EU–27 average perceive a lack of entrepreneurial skills as an inhibiting factor in deciding to start their own business. In Slovenia, higher education institutions have strengthened activities to stimulate graduates' employability (Čelebič, 2014). The need to further strengthen entrepreneurial competences of European citizens is partly illustrated by the data from the Global Entrepreneurship Monitor on adults' belief as to whether they have the required skills and knowledge to start a business (GEM, 2014). In all but three EU Member States participating in this study (i.e. Poland, Slovakia and Slovenia), less than half of the population aged 18–64 hold a positive view about their own abilities for starting a business. The available data suggest that European education systems have been less successful in fostering the entrepreneurial spirit in learners or motivating them towards entrepreneurship than in other key parts of the world (European Commission, 2012).

According to Jurše and Tominc (2008), the first step in curriculum development should be a detailed analysis of the required skills and competences of graduates after their graduation from the study programme. Since the diploma obtained by graduates should be viewed only as an entry ticket to the labour market, general and professional abilities, competences and skills of graduates are the attributes that count most by the employers. The development of new study programmes should be implemented in close cooperation with selected entrepreneurs and managers in order to take into account the labour market needs in the curriculum reform. With such an approach, a business school would reach its key goal, which is enabling their graduates to be better equipped with professional as well as transversal competences for the challenges in a dynamic business world when they enter the labour market (Belak et. al, 2016b, pp. 123–142).

We follow the definition of a competence as accepted within the Erasmus+ project "The acceleration method of development of transversal competences in the students' practical training process". According to this definition a competence (Report O1, 2016, p. 12) "means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development[7]. Transversal competences commonly known as generic skills or interdisciplinary competences may be used during the implementation of diverse tasks in many thematic areas. Such competences are defined as a combination of knowledge, skills and attitudes appropriate to situations necessary to meet social aims[8]. They offer added value in relation to employment, social cohesion (European pact for youth), which explains the significance of lifelong learning as regards adaptability to change

[7] Defined in accordance with the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2008/C 111/01) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF

[8] Defined in accordance with the recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning (2006/962/EC) http://eur-lex.europa.eu/legal content/EN/TXT/HTML /?uri=URISERV:c11090&from=CS

and social inclusion. These competences were recognized as being important because of their transversal character[9]."

Within the Erasmus+ project four transversal competences (i.e., entrepreneurship, creativity, teamwork, and communicativeness) were explored. One of the important steps in the project was a survey that was carried out among 135 enterprises from Poland, Finland, Slovakia and Slovenia. The research results show (Report O2, 2016, p. 22) that the most important transversal competence as regards by surveyed entrepreneurs is entrepreneurship, which is scored as a competence needed very much and systematically used. The lowest, although still with high score was obtained for transversal competence communicativeness. The transversal competences creativity and teamwork achieved similar results (Figure 12.1):

– Entrepreneurship: 4.32 points out of 5 points;
– Creativity: 4.19 points out of 5 points;
– Teamwork: 4.2 points out of 5 points; and
– Communicativeness: 4.03 points out of 5 points.

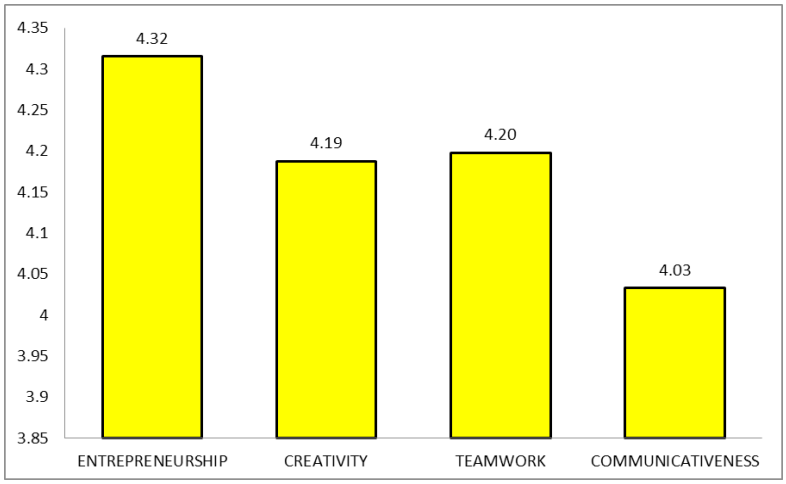

Figure 12.1 Research results on the importance of transversal competences.
Source: Report O2, 2016, p. 22.

Four Slovenian universities foster and develop transversal competences: University of Ljubljana, University of Maribor, University of Primorska, and University of Nova Gorica. By offering under- and post-graduate study programmes, they all develop transversal competences within their courses. However, no recent research on the standards of rating (valuation and validation, monitoring, etc. of development of transversal competences) and the methods of learning effects exists which would give us the insights and cognitions regarding the status and outcomes of transversal competences at the national level of higher education in Slovenia today. Therefore, this section presents the development of transversal competencies in the chosen courses.

In the Erasmus+ project mentioned a transversal competence entrepreneurship is defined as follows (Report O2, 2016, p. 6): "Entrepreneurship: a set of knowledge, skills and attitudes allowing to adapt to change, identify new opportunities of development and their critical evalu-

[9] Transversal competences constitute part of assumptions of the work programme Education and Training 2010, the Communique issued by the Commission in 2001 concerning the realization of the European space for lifelong learning and the Council resolution of 2002. The last two documents contain specific suggestions relating to making key competences a priority for all age groups.

ation, foresee and create new innovative solutions, take rational risk as well as implement and realize ideas[10]." Competence of entrepreneurship is by UM FEB addressed throughout the study programmes and especially within specialized study fields. Within its university under- and post-graduate study programmes, UM FEB offers study field Entrepreneurship whose goal is for the students to acquire knowledge in entrepreneurship that enables developmental and operative management of small and medium-sized enterprises, implementation of intrapreneurship, management of independent business plans and programmes in large enterprises, establishing of own enterprises or taking-over existing family businesses.

At the master's degree level, Entrepreneurship and Innovation study field provides students with the knowledge which enables them to manage their own enterprise and invention-innovation processes as well as to make decisions in developmental oriented organizations. To illustrate the development of entrepreneurship in higher education, we present the course Development of Dynamic Enterprise, which is offered by the Department of strategic management and company policy within Strategic and Project Management study field at UM FEB (Belak et. al, 2016b, pp. 123–142).

The aim of the course Development of Dynamic Enterprise is to attain the following objectives and competencies: to systematically and in detail enhance theoretical knowledge on particularities of enterprises and other organizations in different phases of their life cycle, developmental cycle and growth cycle, and management particularities adjusted to these different phases; to gain the ability to integrate the already acquired knowledge on governance and management with new knowledge on dynamic enterprises and other organizations, as well as ways of their establishment; and to gain the ability to apply the acquired theoretical knowledge in the field of development of a dynamic enterprise, which will allow students to critically evaluate research, advanced scholarship and methodologies as well as give them the autonomy and originality in solving problems in the field of development of a dynamic enterprise. The students attending this course obtain an in-depth and systematic understanding and knowledge regarding the particularities of enterprises and other organizations in different phases of their life cycle, developmental cycle and growth cycle, and management particularities adjusted to these different phases, as well as regarding dynamic enterprises and other organizations, and ways of their establishment. Also, the students will be able to work with theoretical/research-based knowledge (e.g. life cycle theories, management theories) at the forefront of their academic discipline, will have the awareness and the ability to manage the implications of ethical dilemmas and work proactively with others to formulate solutions, and achieve a comprehensive understanding of techniques/methodologies applicable to their own work (e.g. methodologies to determine the stage of life/developmental cycle), which enables the assessment of a target level of dynamics and needed measures for establishing a dynamic enterprise.

Key transferable skills obtained in this course are: to competently undertake research tasks with minimum guidance; to be an independent and self-critical learner; to have independent learning ability required for a continuous professional study; to make use of professional knowledge of others where appropriate. Practical skills developed within this course are: to be able to operate in complex and unpredictable and/or specialised contexts; to have an overview of the issues governing good practice and to be able to exercise initiative and personal responsibility in professional practice. Considering the learning and teaching methods of this course (lectures, case studies and active individual and group work), this course significantly contributes to the development of transversal competences such as entrepreneurship, communicativeness, creativity and teamwork.

[10] Defined on the basis of the term entrepreneurship as set out in: http://eur-lex.europa.eu/legal-content/EN/ TXT/?uri=celex:52003DC0027 and Commission Green Paper of 21 January 2003 on Entrepreneurship in Europe.

In the Erasmus+ project mentioned a transversal competence communicativeness is defined as follows (Report O2, 2016, p. 7): "Communicativeness: a set of knowledge, skills and attitudes relating to reliable transfer of information and establishment and maintenance of appropriate interpersonal relations which are the foundation of effective professional activity, clear and comprehensible expression and interpretation of ideas, thoughts, feelings, facts and opinions in speaking and writing, understanding non-verbal messages, listening to and respecting other people's opinions, being able to negotiate, make public appearances and self-presentations[11]." For the purposes of presenting the development of communicativeness in higher education, we describe the course Communication Skills offered by UM FEB in which students learn, among other, about verbal and non-verbal communication. This course is designed to familiarize the students with the field of business communication and to give them the skills for competent communication in business environment. The students obtain the knowledge about the preparation, application and analysis of the following activities: presentations, meetings, interview, speeches, and listening. Students learn to coordinate the use of business communication activities. During the course students develop skills for team work and professional ethics in the field of business communication. Considering the learning and teaching methods of this course (interactive lectures, laboratory work, and team work), this course significantly contributes to the development of transversal competences, especially communicativeness.

In the Erasmus+ project mentioned a transversal competence creativity is defined as follows (Report O2, 2016, p. 6–7): "Creativity: a set of knowledge, skills and attitudes connected with the practical application of creative thinking in order to come up with original and useful solutions to problems and to develop new concepts or new links with already existing ideas and concepts[12]." At UM FEB, creativity of students is addressed and developed in several courses, especially in the course Creative Thinking and Decision-Making Methods (elective course in both under- and post-graduate programmes) where students learn about methods of problem and opportunity definition, creative thinking methods and decision-making methods supportive of creative problem solving. The aim of this course is for students to attain the following objectives and competencies: to enhance the theoretical knowledge in the field of creative thinking and decision-making; to gain the ability to apply theoretical knowledge in economic and business practice in activating and strengthening creativity and in decision-making by including the use of related quantitative methods, computer programs and other methods of creative thinking; to acquire the creative and systems approach when dealing with business and economic problems; and to acquire advanced knowledge of basic theoretical approaches in the field of creative thinking and decision-making. The students attending this course acquire specific knowledge in dialectical systems thinking, quantitative methods supportive of creativity and decision-making, traditional and modern internationally advanced methods for strengthening individual and group creativity, learn to recognise the relationship between the central invention/innovation activities, develop the skills to interpret the gained results in the field multi-criteria analysis, learn how to analyse and synthesise different approaches to economic and business problems, is able to pursue further analysis regarding creative thinking and decision making, is qualified to control and supervise the decision making processes, and is able to demonstrate awareness of wider social and environmental ethical issues in areas of the decision making processes.

[11] Defined on the basis of the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: "Rethinking education: investing in skills for better socio-economic outcomes", 20 November 2012; key in the process of lifelong learning, OJ 394, 30 December 2006; education and training ("ET 2020"), OJ 119, 28 May 2009.

[12] Defined on the basis of the term creativity as set out in http://eur-lex.europa.eu/legal-content/EN/ TXT/PDF/?uri=CELEX:32008D1350&qid=1445885985313&from=EN

Key transferable skills obtained within this course are: to further develop skills and expertise in the use of knowledge in a specific working area; to upgrade the ability to become an autonomous learner; to upgrade the ability to apply information technology; to upgrade the ability to work in pairs and groups; and to further develop communication skills in an effective manner for effective and professional communication. Practical skills developed within this course are: to get practical experience in the field of selection and use of creative thinking methods, and to be able to act autonomously with defined guidelines and certain level of supervision. Considering the learning and teaching methods of this course (lecturing by discussion, AV presentations, case studies and active individual and group work), this course significantly contributes to the development of transversal competences such as entrepreneurship, communicativeness, creativity and teamwork.

In the Erasmus+ project mentioned a transversal competence teamwork is defined as follows (Report O2, 2016, p. 7): "Teamwork: a set of knowledge, skills and attitudes allowing to work in a way that is based on activity and commitment to tasks carried out by a group as well as on aspiration to achieve a mutual aim, provide work-improving solutions, adopt joint responsibility for task completion, effectively exchange knowledge and experience, receive feedback, work together on solving problems and support each other in task execution[13]." For the purposes of presenting the development of teamwork in higher education, we describe the chosen course offered at UM FEB. Teamwork as a competence is addressed and developed throughout the both programmes (under- and post-graduate programmes). To illustrate how teamwork is developed and fostered within Strategic and Project Management study field at UM FEB, we present the chosen course offered by the Department of Strategic Management and Company Policy – Governance and Strategic Management.

The aim of the course Governance and Strategic Management is for students to attain the following objectives and competencies: to systematically and in detail enhance theoretical knowledge in the field of corporate governance and strategic management; to gain the ability to integrate previously acquired knowledge in economics, law and other areas with the governance and management theory; and to gain the ability to apply the acquired theoretical knowledge in the field of corporate governance and strategic management in order to be able to critically evaluate research, advanced scholarship and methodologies as well as enhance autonomy and originality in solving problems in the field of corporate governance and strategic management. The students attending this course obtain an in-depth and systematic understanding of knowledge in corporate governance and strategic management and can work with theoretical/research-based knowledge (e.g. interest theories, theories of sources of competitive advantages) at the forefront of their academic discipline, develop the awareness of and the ability to manage the implications of ethical dilemmas and work proactively with others to formulate solutions, and have a comprehensive understanding of techniques/methodologies applicable to their own work.

Key transferable skills obtained by this course are: to competently undertake research tasks with minimum guidance; to be an independent and self critical learner; to have independent learning ability required for continuing professional study; to make use of professional knowledge of others where appropriate. Practical skills developed within this course are: the ability to operate in complex and unpredictable and/or specialised contexts and to have an overview

[13] Defined on the basis of the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: "Rethinking education: investing in skills for better socio-economic outcomes", 20 November 2012; key in the process of lifelong learning, OJ 394, 30 December 2006; education and training ("ET 2020"), OJ 119, 28 May 2009.

of the issues governing good practice; the ability to exercise initiative and personal responsibility in professional practice and to possess technical expertise; the ability to perform smoothly with precision and effectiveness; the ability to adapt skills and design or develop new skills and/or procedures for new situations. Considering the learning and teaching methods of this course (lectures, case studies and active individual and group work), this course significantly contributes to the development of transversal competences such as entrepreneurship, communicativeness, creativity and teamwork.

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13. METHODOLOGY FOR THE CONDUCT OF THE STUDY OF DEMAND FOR TRANSVERSAL SKILLS AMONG ENTREPRENEURS

Kamila SZWAJKOWSKA, Dariusz PRZYBYŁEK

13.1. Aim of the study

The study of demand for transversals skills among entrepreneurs was run since December 2015 until April 2016 according to requirements identified in project „The acceleration method of development of transversal competences in the students' practical training process". The area of analyse was to look at the problems of entrepreneurs transversal competences among graduates – transversals competences are nowadays, besides language skills, core competencies recommended by employers.

The main objective of the study was to assess demand for transversal competences among entrepreneurs in selected European Union countries. The main objective of research group was to look at transversal competences from two perspectives: higher education and labour market in the context of using practical methods of teaching in higher education in four European Union countries.

Specific objectives of the study
The main objective, due to its complexity, was divided into four specific objectives according to the subject of the study.
The first objective – assessment of demand for entrepreneurship skills.
The second objective – assessment of demand for creativity skills.
The third objective – assessment of demand for communicativeness skills.
The fourth objective – assessment of demand for teamwork skills.

13.2. Subject of the study

The subject of the study is four competences selected during expert consultations, recognized as highly desirable among graduates of institutions of higher education who enter the labour market. These include: a) entrepreneurship skills, b) creativity skills, c) communicativeness skills, d) teamwork skills.

For the purpose of cooperation in the realised project, a uniform terminology which facilitates communication between researchers from all academic centres in Europe was developed and included in the first part of the report for task O1 – the report of used methods of transversal competences in the students' practical training process.

13.3. Population of the study

Population should be understood as a finite set of units, characterized by specific, common features, which the researcher obtains in the process of testing certain information. The population in this case is the enterprises of any legal form, in any industry and any size in the specified European countries. Their total number is estimated at 3.5 million. The size of the population indicates the scale of significance of the undertaken topic of the studies.

To maintain the representativeness of the sample at a minimum level, the internal structure of the population was kept. The structure of the population stemmed from the assumptions

carried out in the project – the purpose of the study, but was in line with the standard defining features: the object of study, delivery time and the area where the study was conducted. (Szreder, 2010, page 40).

13.4. Sample of the study

In the B2B sector research sampling process often based on the method of intentional or discretionary. Organizer of research, for reasons of reliability and completeness of data collected deliberately carried out the selection of sampling units (Hague, 2006, page 154). As the sampling method was chosen method of typical unit's selection. The course of identifying enterprises was consistent with the assumptions made in the description of the sample.

Due to the high-quality, innovative and exploratory nature of the research, it is set at a lower level than the statistical requirements. The initial size of the project was estimated at 100 companies in 4 separate countries, in Poland, Finland, Slovakia and Slovenia. The study was conducted in 135 enterprises.

By correctly selected units of the population in relation to the sample, the following variables were secured: size of enterprise counted by the number of employees and the activity structure.

The indicator "response rate" was established at 30% (the final sample of 385 companies, questionnaires was sent to approximately 1300 enterprises). The actual rate of the implementation of the study was about 12%. The research realized in the project was international and language issues could be the bases of wrong interpretation of questions, what is often pointed by literature of the subject (Schroeder, 2007, s. 77). However, due to the precise choice of words and the harmonization of conceptual issues in the study, there were no problems arising from misunderstanding the questions in the questionnaire.

13.5. Size of enterprises

The size of enterprises as a variable structuring the sample is the base of diversification of demand for competences. The following distribution of the survey sample was assumed:

- 60% of micro companies (up to 9 persons)
- 30% of small companies (10-49 persons)
- 8% of medium-sized companies (50-249 persons)
- 2% of large companies (over 250 persons)

Distribution of the number of enterprises participating in the study by country is presented in table 13.1.

Country	Up to 9 persons	10-49	50-249	Over 250	**Total**
Poland	16	9	11	8	**44**
Slovakia	18	8	6	1	**33**
Slovenia	15	14	3	3	**35**
Finland	2	13	5	3	**23**
Total	**51**	**44**	**25**	**15**	**135**

Table 13.1. Number of enterprises participating in the study by size and country. Source: Own results based on realized study.

The presented numbers expressed as a percentage are shown in figure 1. The final structure of the sample is: micro companies (up to 9 persons) 37.3%, small companies (10-49 persons) 32.8%, medium-sized companies (50-249 persons): 18.7%, Large companies (over 250 persons): 11.2%. of analyzed enterprises.

In accordance with the assumptions, micro-small-medium enterprises were the dominating group of the surveyed entities and covered 88.8% of the sample.

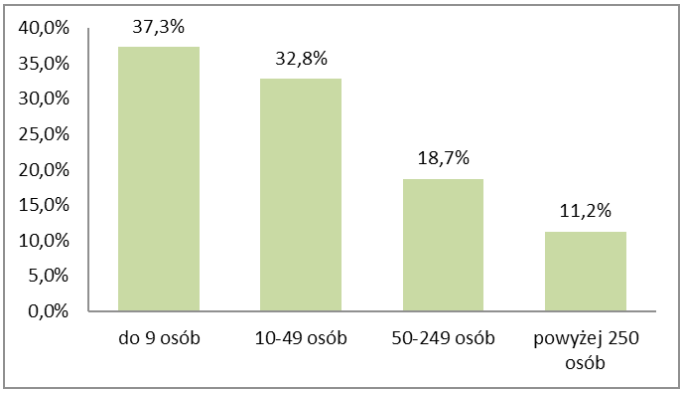

Figure 13.1. Number of enterprises participating in the study by size – expressed as a percentage. Source: Own results based on realized study.

As presented above: the number of micro companies in the analysed sample was not covered. Nevertheless, the strong point of the sample structure is an increased number of large companies – it should be emphasized that these are enterprises – where demand for employees is higher as well as these enterprises have well-developed HR departments, employment plans and clearly defined requirements for competences.

Types of activity

It was equally important, as regards final conclusions, to take into account enterprises' assessment and opinions from different industries. This variable was secured in the sample and its distribution is shown in figure 13.2.

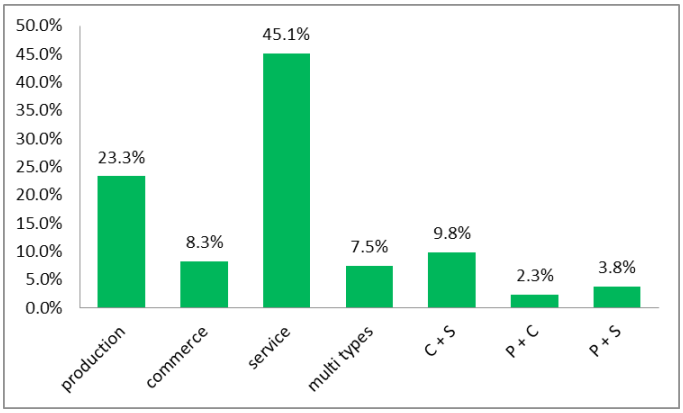

Figure 13.2. Number of enterprises participating in the study by types of activity – expressed as a percentage. Source: Own results based on realized study.

Dictionary: Multi types: Production + Commerce + Service; C+S: Commerce + Service; P+C: Production + Commerce; P+S: Production + Service.

The biggest group of enterprises involved in the study according to types of activity was service (45.1%) which covers the established demand in the analysed sample, the production type was declared by 23.3% of respondents. Over 8% of enterprises represent commerce and the rest of the analysed sample represent multi types of activity.

Activity period of the analysed enterprises

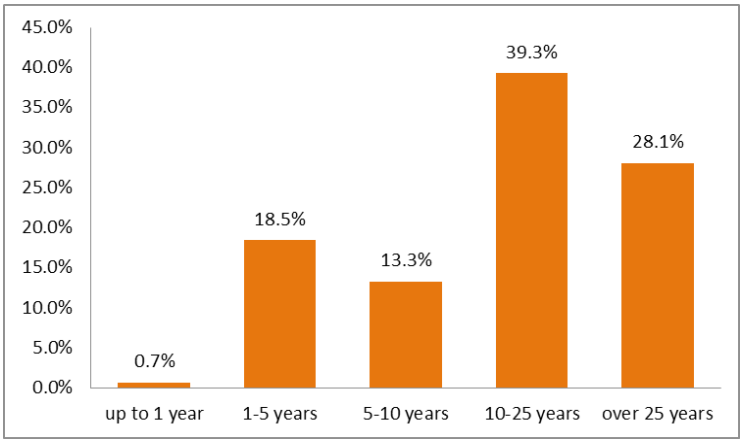

Figure 13.3. Number of enterprises participating in the study by the period of economic activity – expressed as a percentage. Source: Own results based on realized study.

The structure of the analysed sample according to the period of activity shows the dominating level of enterprises older than 10 years. It is the biggest group of the analysed sample (57.4%) and thanks to such distribution, the achieved results can be viewed as expert opinions.

The specific distribution of the sample in relation to the period of economic activity is as follows:

- enterprises operating up to 1 year were 0.7% of analyzed sample
- enterprises operating 1-5 years were 18.5% of analyzed sample
- enterprises operating 5-10 years were 13.3% of analyzed sample
- enterprises operating 10-25 years were 39.3% of analyzed sample
- enterprises operating over 25 years were 28.1% of analyzed sample

Location of the analysed enterprises

Another feature which the researchers took into account is the location of the enterprises' economic activity. The location of the enterprises participating in the study is as follows: rural area was shown 12.7% as the location of economic activity. City up to 20K inhabitants was shown 20.1%. City from 20K to 50K inhabitants was shown 9.7%. City from 50K to 100K inhabitants was shown 19.4%. City over 100K inhabitants was shown 38.1%.

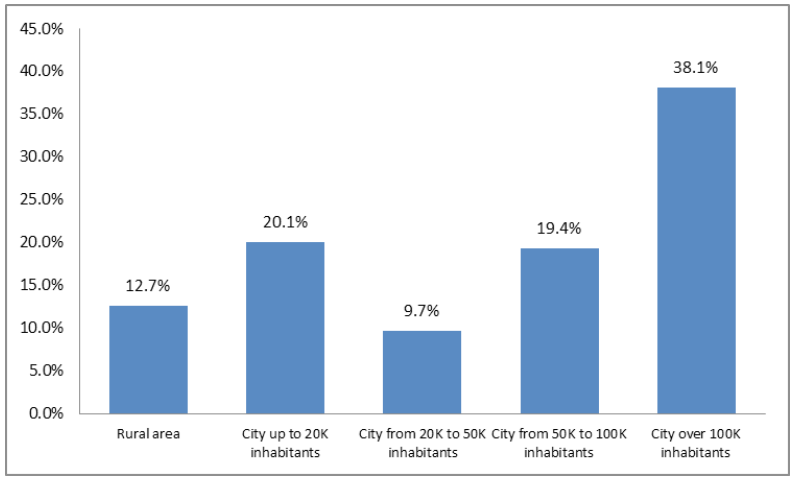

Figure 13.4. Number of enterprises participating in the study by the location of economic activity– expressed as a percentage. Source: Own results based on realized study.

The biggest group of enterprises involved in the study in relation to the location of economic activity was made up by enterprises located in cities of over 100K inhabitants. Enterprises located in such cities show high requirements related to employees and their competences. In these locations there are institutions which increase employees' qualifications and develop their competences.

Family business

The analysed sample allowed to specify the origin of a business, taking into account family roots of the business.

The following were identified in the analysed sample: 44.4% of family businesses and 55.6% of non-family businesses.

The distribution confirms the average number of family businesses declared by the countries whose populations were analysed.

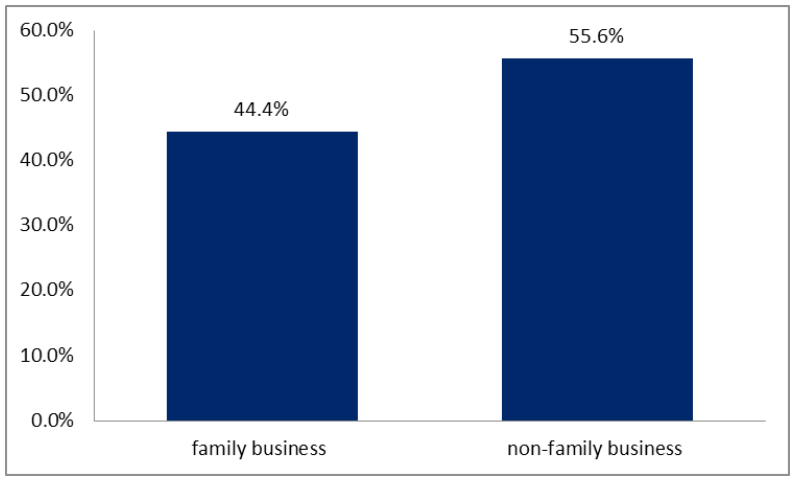

Figure 13.5. Number of enterprises participating in the study by family roots of business – expressed as a percentage. Source: Own results based on realized study.

13.6. Method of the study

Unit of the study
Enterprises were represented by management level, HR departments or owners involved in the identification of competence needs in the enterprise.

Method of the study
Due to a considerable dispersion between respondents chosen, the most frequent method in such cases is the indirect survey method. The group of indirect survey methods is dominated by questionnaires administered by means of IT modern tools such as e-mail or online discussion platforms. Regardless of the way in which a questionnaire is received by respondents, its purpose is to get written answers to questions included in the questionnaire.

The selection of the study method was associated with its advantages. Nevertheless, the team was not able to avoid disadvantages of that method (Table 13.2).

Method of the study	Strengths	Weaknesses
Questionnaire (indirect) sent by e-mail, Internet, etc.	– Low cost – Wide range – Fast and easy way to get to each group – Elimination of respondents' interference	– Low percentage of returned filled questionnaires – Incomplete representativeness of the sample – Answers possible to be misunderstood

Table 13.2: Strengths and weaknesses of questionnaire usage. Source: Own results based on realized study.

Tools of the study
The tool used to collect information in the study was a questionnaire. A questionnaire was used in the study of demand for transversal competences among enterprises as it is a flexible tool to use different forms to formulate questions.

A questionnaire was chosen as a tool of the study in each of four European countries. All of them also chose the Internet. The questionnaire was created in a Google form.

Structure of the questionnaire
The main purpose of creating the questionnaire was to develop the order and structure of questions in a way that would allow entrepreneurs from different European countries to interpret the results in the same way. The basis was to single out indicators for each transversal competence and submit it to assessment.
To assess the demand for transversal competences, the five-level scale was used.

The scale was accompanied by instructions:
1 – competence completely not needed;
2 – competence needed incidentally,
3 – competence needed but rarely used,
4 – competence needed and often used,
5 – competence needed very much and systematically used.

After the ratings, an open question for each of the four transversal competences was asked to indicate the activities in which the analysed transversal competence is used in the analysed enterprise.

13.7. Analyzed competences and their indicators

The first months of operating the project led to the identification of features shaping particular competences. The following are the competences used during creating the questionnaire.

Entrepreneurship
Entrepreneurship was understood as a set of knowledge, skills and attitudes allowing to adapt to change, identify new opportunities of development and their critical evaluation, foresee and create new innovative solutions, take rational risk as well as implement and realize ideas.
The indicators of entrepreneurship are:
- ability to initiate and accept changes,
- ability to perceive and critically evaluate entrepreneurial opportunities,
- ability to plan creative solutions,
- ability to create and implement new, creative solutions,
- ability to take rational risk,
- ability to translate ideas into specific activities.

Creativity
Creativity was recognized as a set of knowledge, skills and attitudes connected with the practical application of creative thinking in order to come up with original and useful solutions to problems and to develop new concepts or new links with already existing ideas and concepts.
The indicators of creativity are:
- ability to use creative thinking techniques,
- ability to create original and useful solutions to problems,
- ability to create new concepts or new connections between existing ideas or concepts.

Teamwork
Teamwork was understood as a set of knowledge, skills and attitudes allowing to work in a way that is based on activity and commitment to tasks carried out by a group as well as on aspiration to achieve a mutual aim, provide work-improving solutions, adopt joint responsibility for task completion, effectively exchange knowledge and experience, receive feedback, work together on solving problems and support each other in task execution.

The indicators of teamwork are:
- ability to be actively involved in tasks,
- ability to build friendly atmosphere and positive relationships,
- ability to solve conflicts in a group,
- ability to motivate others to act,
- ability to encourage others to reach a common goal,
- ability to respect norms and rules of a group as well as their tasks and ideas,
- ability to effectively transfer information.

Communicativeness
Communicativeness was recognized as a set of knowledge, skills and attitudes relating to reliable transfer of information and establishment and maintenance of appropriate interpersonal relations which are the foundation of effective professional activity, clear and comprehensible expression and interpretation of ideas, thoughts, feelings, facts and opinions in speaking and writing, understanding non-verbal messages, listening to and respecting other people's opinions, being able to negotiate, make public appearances and self-presentations.

The indicators of communicativeness are:
– ability to transfer information in an effective and reliable way,
– ability to establish and sustain good interpersonal relationships,
– ability to express concepts, thoughts, opinions in speaking and writing in a clear and comprehensible way,
– ability to interpret non-verbal messages,
– ability to listen and respect opinions of others,
– ability to negotiate,
– ability to express and defend one's own opinion,
– Ability to speak in public and give self-presentations.

13.8. Structure of the questionnaire

The questionnaire included 24 closed questions and 1 open question. The questionnaire included also metric part.
Closed questions relate to assess the suitability shown below transversal competences on a scale from 1 to 5.

Competences: Entrepreneurship
Question 1. Ability to adjust flexibly to changing working conditions.
Question 2. Ability to initiate and accept changes.
Question 3. Ability to create and implement new, creative solutions.
Question 4. Ability to translate ideas into specific activities.
Question 5. Ability to reliably analyse factors which affect decision making.
Question 6. Ability to bear the consequences of decisions made.
Question 7. Ability to take rational risk.

Competences: Creativity
Question 8. Ability to create original and useful solutions to problems.
Question 9. Ability to use creative thinking and develop new concepts.
Question 10. Ability to generate original ideas.

Competences: Teamwork
Question 11. Ability to be actively involved in tasks.
Question 12. Ability to build friendly atmosphere and positive relationships.
Question 13. Ability to establish and sustain good interpersonal relationships.
Question 14. Ability to solve conflicts in a group.
Question 15. Ability to motivate others to act.
Question 16. Ability to share knowledge and experience with others.
Question 17. Ability to respect norms and rules of a group.
Question 18. Ability to listen and respect opinions of others.

Competences: Communicativeness
Question 19. Ability to transfer information in an effective and reliable way.
Question 20. Ability to express and interpret concepts, thoughts, opinions in speaking and writing in a clear and comprehensible way.
Question 21. Ability to interpret a body language.
Question 22. Ability to negotiate.
Question 23. Ability to express and defend one's own opinion.
Question 24. Ability to speak in public and give self-presentations.

Open question

The open question included a request to make comments and a suggestion proposing to increase the list of indicators for competences.

Metric part
The metric part included questions about:
- the name of the company,
- operating time of the company,
- types of economic activity,
- type of industry according to NACE,
- organizational and legal form of the company,
- employment level,
- enterprise location,
- range of activities,
- information about family business.

All the questions in the metric part were closed – the exception was a question about the name of the company as well as industry in which that company operates according to NACE.

13.9. Summary

The study of demand for transversals skills among entrepreneurs was run since December 2015 until April 2016 among 135 in 4 separate European Union countries, in Poland, Finland, Slovakia and Slovenia.

Used tool of research method was questionnaire. The questionnaire included 24 closed questions and 1 open question. The questionnaire included also metric part. Questions refer to four transversals competences: entrepreneurship, creativity, teamwork, communicativeness.

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14. PRESENTATION OF THE STUDY RESULTS OF DEMAND FOR TRANSVERSAL COMPETENCES

Kamila SZWAJKOWSKA, Dariusz PRZYBYŁEK

14.1. Analysis of the results for each transversal competence

The demand for cross-cutting competences among entrepreneurs is recorded all over the world. Due to the internationalization of the labour market and the need to work in multinational environments, solution of the lack of transversal competences problem is in the interest of the international business sector and Universities. In the period of December 2015 till April 2016, under the supervision of the Western Chamber of Industry and Commerce from Gorzow Wielkopolski, Poland, research teams from 4 countries of the European Union: Polish, Finland, Slovenia and Slovakia, conducted the study of demand for transversal among entrepreneurs in the framework of the needs identified at determining the course of the project "method of accelerated development of transversal competences in the practical educations of students". The results of the study allow the assessment of the level of demand for transversal among entrepreneurs in international view, including key determinants.

The study was conducted for the design and implementation was the nature of ad hoc surveys (Hague i in. 2005, p. 22). However, due to the interest in the subject of research by businesses and the effectiveness of online surveys, studies can be cyclical and set up into the structure of a typical research describing market conditions (Kaczmarczyk, 2007, p. 215).

The subject of the study is four competences selected during expert consultations, recognized as highly desirable among graduates of institutions of higher education who enter the labour market. These include: 1) entrepreneurship skills, 2) creativity skills, 3) communicativeness skills, 4) teamwork skills.

14.2. Competences: Entrepreneurship

Within the research of competence "entrepreneurship" enterprises were evaluated seven key abilities:

1) Ability to adjust flexibly to changing working conditions.
2) Ability to initiate and accept changes.
3) Ability to create and implement new, creative solutions.
4) Ability to translate ideas into specific activities.
5) Ability to reliably analyse factors which affect decision making.
6) Ability to bear the consequences of decisions made.
7) Ability to take rational risk.

Above competences in the area of entrepreneurship received the following assessment using the 5-point scale ratings:

1) Ability to adjust flexibly to changing working conditions

1 – competence completely not needed: 0.7% of answers
2 – competence needed incidentally: 1.5% of answers
3 – competence needed but rarely used: 11.1% of answers
4 – competence needed and often used: 36.3% of answers
5 – competence needed very much and systematically used: 50.4% of answers

2) Ability to initiate and accept changes

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 1.5% of answers
3 – competence needed but rarely used: 8.9% of answers
4 – competence needed and often used: 36.3% of answers
5 – competence needed very much and systematically used: 53.3% of answers

3) Ability to create and implement new, creative solutions

1 – competence completely not needed: 0.7% of answers
2 – competence needed incidentally: 2.2% of answers
3 – competence needed but rarely used: 12.6% of answers
4 – competence needed and often used: 30.4% of answers
5 – competence needed very much and systematically used: 54.1% of answers

4) Ability to translate ideas into specific activities

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 3.7% of answers
3 – competence needed but rarely used: 8.1% of answers
4 – competence needed and often used: 39.3% of answers
5 – competence needed very much and systematically used: 49% of answers

5) Ability to reliably analyse factors which affect decision making

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 3.7% of answers
3 – competence needed but rarely used: 16.3% of answers
4 – competence needed and often used: 40.7% of answers
5 – competence needed very much and systematically used: 39.3% of answers

6) Ability to bear the consequences of made decisions

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 0.7% of answers
3 – competence needed but rarely used: 14.1% of answers
4 – competence needed and often used: 2.4% of answers
5 – competence needed very much and systematically used: 57.8% of answers

7) Ability to take rational risk

1 – competence completely not needed: 0.7% of answers
2 – competence needed incidentally: 2.2% of answers
3 – competence needed but rarely used: 15.6% of answers
4 – competence needed and often used: 40% of answers
5 – competence needed very much and systematically used: 41.5% of answers

The above competences received similar results of demand. The highest result (57.8%) as the competence needed very much and systematically used (5) was obtained by "Ability to bear the consequences of decisions made".
Assessment of the competence "Entrepreneurship" – presented by the average value of results of particular competences is as follows:

- Rate 5: 49.3% of answers
- Rate 4: 35.8% of answers

- Rate 3: 12.4% of answers
- Rate 2: 2.2% of answers
- Rate 1: 0.3% of answers

In the view of nearly half of the respondents competence "entrepreneurship" was rated as very important. In addition, there was a high proportion of assessments "4" - allows to define this competence as desired by employers and expected among graduates entering the labour market.

14.3. Competences: Creativity

Within the research area of competence "creativity" assessment of enterprises were three key competences:
1) Ability to create original and useful solutions to problems;
2) Ability to use creative thinking and develop new concepts;
3) Ability to generate original ideas.

Above competences in the area of creativity received the following assessment using the 5-point scale ratings:

1) Ability to create original and useful solutions to problems
1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 0.7% of answers
3 – competence needed but rarely used: 10.4% of answers
4 – competence needed and often used: 29.6% of answers
5 – competence needed very much and systematically used: 59.3% of answers

2) Ability to use creative thinking and develop new concepts
1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 5.9% of answers
3 – competence needed but rarely used: 13.3% of answers
4 – competence needed and often used: 38.5% of answers
5 – competence needed very much and systematically used: 42.2% of answers

3) Ability to generate original ideas
1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 7.4% of answers
3 – competence needed but rarely used: 26.7% of answers
4 – competence needed and often used: 32.6% of answers
5 – competence needed very much and systematically used: 33.3% of answers

In the area of "creativity" quite different levels of assessment for particular abilities can be observed. Respondents recognized as the most required competence "Ability to create useful solutions to problems" (59.3% of answers). Assessment of the competence "creativity" – presented by the average value of results of particular competences is as follows:
- Rate 5: 45% of answers
- Rate 4: 33.6% of answers
- Rate 3: 16.8% of answers
- Rate 2: 47% of answers
- Rate 1: 0% of answers.

In the view of nearly half of the respondents competence "creativity" has been assessed as very important. This competence also received high ratings percentage "4". The level of demand for this competence should therefore be assessed as high.

14.4. Competences: Teamwork

Within the research area of competence "teamwork" assessment of enterprises were three key competences:

1) Ability to be actively involved in tasks;
2) Ability to build friendly atmosphere and positive relationships;
3) Ability to establish and sustain good interpersonal relationships;
4) Ability to solve conflicts in a group;
5) Ability to motivate others to act;
6) Ability to share knowledge and experience with others;
7) Ability to respect norms and rules of a group;
8) Ability to listen and respect opinions of others.

Above competences in the area of teamwork received the following assessment using the 5-point scale ratings:

1) Ability to be actively involved in tasks

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 2.2% of answers
3 – competence needed but rarely used: 17% of answers
4 – competence needed and often used: 37.8% of answers
5 – competence needed very much and systematically used: 43% of answers

2) Ability to build friendly atmosphere and positive relationships

1 – competence completely not needed: 0.7% of answers
2 – competence needed incidentally: 2.2% of answers
3 – competence needed but rarely used: 18.5% of answers
4 – competence needed and often used: 33.3% of answers
5 – competence needed very much and systematically used: 45.2% of answers

3) Ability to establish and sustain good interpersonal relationships

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 1.5% of answers
3 – competence needed but rarely used: 11.1% of answers
4 – competence needed and often used: 40.7% of answers
5 – competence needed very much and systematically used: 46.7% of answers

4) Ability to solve conflicts in a group

1 – competence completely not needed: 1.5% of answers
2 – competence needed incidentally: 4.4% of answers
3 – competence needed but rarely used: 17.8% of answers
4 – competence needed and often used: 41.5% of answers
5 – competence needed very much and systematically used: 34.8% of answers

5) Ability to motivate others to act

1 – competence completely not needed: 0.7% of answers
2 – competence needed incidentally: 2.2% of answers

3 – competence needed but rarely used: 14.8% of answers
4 – competence needed and often used: 35.6% of answers
5 – competence needed very much and systematically used: 46.7% of answers

6) Ability to share knowledge and experience with others
1 – competence completely not needed: 0.7% of answers
2 – competence needed incidentally: 2.2% of answers
3 – competence needed but rarely used: 17% of answers
4 – competence needed and often used: 31.8% of answers
5 – competence needed very much and systematically used: 48.1% of answers

7) Ability to respect norms and rules of a group
1 – competence completely not needed: 1.5% of answers
2 – competence needed incidentally: 2.2% of answers
3 – competence needed but rarely used: 20% of answers
4 – competence needed and often used: 34.8% of answers
5 – competence needed very much and systematically used: 41.5% of answers

8) Ability to listen and respect opinions of others
1 – competence completely not needed: 1.5% of answers
2 – competence needed incidentally: 2.2% of answers
3 – competence needed but rarely used: 16.3% of answers
4 – competence needed and often used: 36.3% of answers
5 – competence needed very much and systematically used: 43.7% of answers

The above competences received similar results of demand. The highest result (48.1%) as the competence needed very much and systematically used (5) was obtained by "Ability to share knowledge and experience with others".

Assessment of the competence "Teamwork" – presented by the average value of results of particular competences is as follows:
- Rate 5: 43.7% of answers
- Rate 4: 36.5% of answers
- Rate 3: 16.6% of answers
- Rate 2: 2.4% of answers
- Rate 1: 0.8% of answers

Nearly 80% of respondents rated the high demand for the competence of "team work", giving it a rating of "5" or "4". This allows defining this competence as desired by employers and expected among graduates entering the labour market.

14.5. Competences: Communicativeness

Within the research area of competence "communicativeness" assessment of enterprises were six key competences:
1) Ability to transfer information in an effective and reliable way;
2) Ability to express and interpret concepts, thoughts, opinions in speaking and writing in a clear and comprehensible way;
3) Ability to interpret a body language;
4) Ability to negotiate;

5) Ability to express and defend one's own opinion;
6) Ability to speak in public and give self-presentations.

Above competences in the area of communicativeness received the following assessment using the 5-point scale ratings:

1) Ability to transfer information in an effective and reliable way

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 0.7% of answers
3 – competence needed but rarely used: 8.9% of answers
4 – competence needed and often used: 34.8% of answers
5 – competence needed very much and systematically used: 55.6% of answers

2) Ability to express and interpret concepts, thoughts, opinions in speaking and writing in a clear and comprehensible way

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 0% of answers
3 – competence needed but rarely used: 18.5% of answers
4 – competence needed and often used: 34.1% of answers
5 – competence needed very much and systematically used: 47.4% of answers

3) Ability to interpret a body language

1 – competence completely not needed: 3% of answers
2 – competence needed incidentally: 15.6% of answers
3 – competence needed but rarely used: 37% of answers
4 – competence needed and often used: 30.4% of answers
5 – competence needed very much and systematically used: 14.1% of answers

4) Ability to negotiate

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 3.7% of answers
3 – competence needed but rarely used: 20% of answers
4 – competence needed and often used: 31.1% of answers
5 – competence needed very much and systematically used: 45.2% of answers

5) Ability to express and defend one's own opinion

1 – competence completely not needed: 0% of answers
2 – competence needed incidentally: 3.7% of answers
3 – competence needed but rarely used: 18.5% of answers
4 – competence needed and often used: 37.8% of answers
5 – competence needed very much and systematically used: 40% of answers

6) Ability to speak in public and give self-presentations

1 – competence completely not needed: 3% of answers
2 – competence needed incidentally: 5.9% of answers
3 – competence needed but rarely used: 29.6% of answers
4 – competence needed and often used: 34.1% of answers
5 – competence needed very much and systematically used: 27.4% of answers

In the area of "communicativeness" quite different levels of assessment for particular competences can be observed. Respondents recognized the competence "Ability to transfer informa-

tion in an effective and reliable way" (55.6% of answers) as the most required one. The lowest result was obtained by "Ability to interpret a body language" as well as "Ability to speak in public and give self-presentations". Assessment of the competence "communicativeness" – presented by the average value of results of particular competences is as follows:

- Rate 5: 38.3% of answers
- Rate 4: 33.7% of answers
- Rate 3: 22.1% of answers
- Rate 2: 4.9% of answers
- Rate 1: 1.0% of answers

Among the analyzed competence – area "communication" received the lowest score in the assessment of entrepreneurs' demand. It does not change the fact that in the opinion of the employers 'communication' to is the most needed and important competence among employees.

14.6. Results of the study for each of transversal competences

The average results of particular competences – defined according to 4 transversal competences are as follows:

- Entrepreneurship: 4.32
- Creativity: 4.19
- Teamwork: 4.2
- Communicativeness: 4.03

According to the respondents' opinion, the most important competence is "entrepreneurship" – that competence scored the highest number of answers as a competence needed very much and systematically used. The lowest level of answers was obtained by "communicativeness". The competences "creativity" and "teamwork" achieved similar results.

14.7. Results of the study for particular transversal competences – obtained in countries involved in the study

Results of the study for particular transversal competences – according to countries involved in the study:

1) Finland
The highest score of the demand received competence "team work" with a score of 4.39. The next position got competence "entrepreneurship" (score of 4.29). Entrepreneurs from Finland - subsequently - pointed to the competence of the "communication" (score of 3.98), the last place went competence "creativity" with a score of 3.85.

2) Poland
The highest score of the demand received competence "entrepreneurship" with a score of 4.42. The next position got competence "creativity" (score of 4.37). Polish entrepreneurs - subsequently - pointed to the competence of "teamwork" (score of 4.2), the last place went competence "communication" with a score of 4.15.

3) Slovakia
The highest score of the demand received competence "creativity" with a score of 4.24. The next position got competence "entrepreneurship" (score of 4.22). Businesses from Slovakia -

subsequently - pointed to the competence of "teamwork" (score of 4.03), the last place went competence "communication" with a score of 3.86.

4) Slovenia
The highest score of the request received competence "entrepreneurship" with a score of 4.28. The next position got competences "teamwork" (score of 4.21). Businessmen from Slovenia - subsequently - pointed to the competence of "creativity" (score of 4.11), the last place went competence "communication" with a score of 4.06.

Results of the study for particular transversal competences – obtained in countries involved in the study:

14.8. Results of the study for particular transversal competences – results obtained in relation to types of economic activity

The demand for each transversal competences is strongly correlated with a particular economic sector. With respect to specific industries results in demand for transversal competences as follows:

1) Competence "entrepreneurship"
The highest demand for this competence was recorded in the service sector (profit 4.34), then - ex aequo - in the retail sector and multi-sector business activity (score of 4.33), the last one - in the manufacturing industry (with a score of 4.22).
2) Competence "creativity"
The highest demand for this competence was recorded in the service sector (profit 4.25), followed by the retail sector (profit 4.22), a multi-sector business activity (score 4.17). The lowest level of demand was recorded in the manufacturing industry (result 4.05).

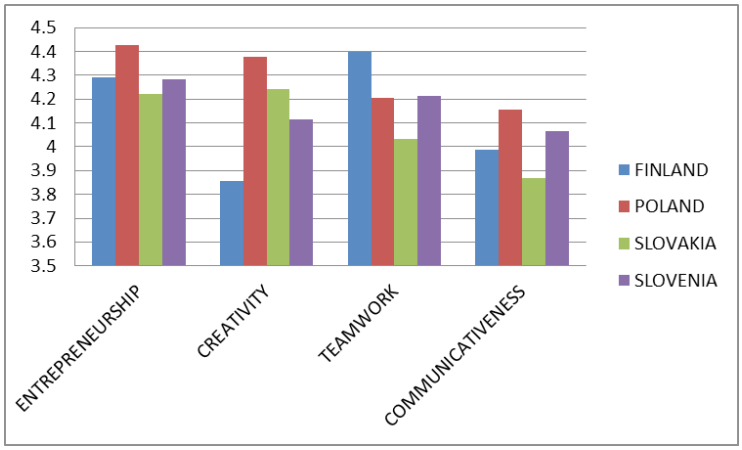

Figure 14.1. Results of the study for particular transversal competences (average values of assessment for particular competences) – according to countries involved in the study. Source: Own results based on realized study.

3) Competence "teamwork"
The highest demand for this competence was recorded in multi-branch enterprises (profit 4.22), followed by the service sector (profit 4.21), commercial (profit 4.2). The lowest level of demand was recorded in the manufacturing industry (result 4.14).

4) Competence "communication"
The highest demand for this competence was recorded in the service sector (profit 4.16), similar results registered in the retail sector (4.15), followed by - in a multi-branch enterprises (profit 4.03), while the lowest score was recorded in the manufacturing industry (3.73).

Results of the study for particular transversal competences – results obtained in relation to types of economic activity:

Collective results for particular transversal competences – in relation to the employment level
The size of the company is another factor implying the level of demand for the different transversal competences. With regard to enterprise size results in demand for transversal competences as follows:

1) Competence "entrepreneurship"
The highest demand for this competence was recorded among small businesses (net 4.34), a similar result was recorded among large enterprises (4.34), and subsequently - among medium (4.29) and micro (4.28).
2) Competence "creativity"
The highest demand for this competence was among medium-sized enterprises (net 4.33). A similar result was recorded among large businesses (4.11), small (4.1) and micro (4.09).

3) Competence "teamwork"
The highest demand for this competence was observed among large enterprises (net 4.29); a similar result was recorded among micro (4.26) and small enterprises (4.23). The lowest level of demand for this competence reported representatives of medium-sized businesses (net 4.09).

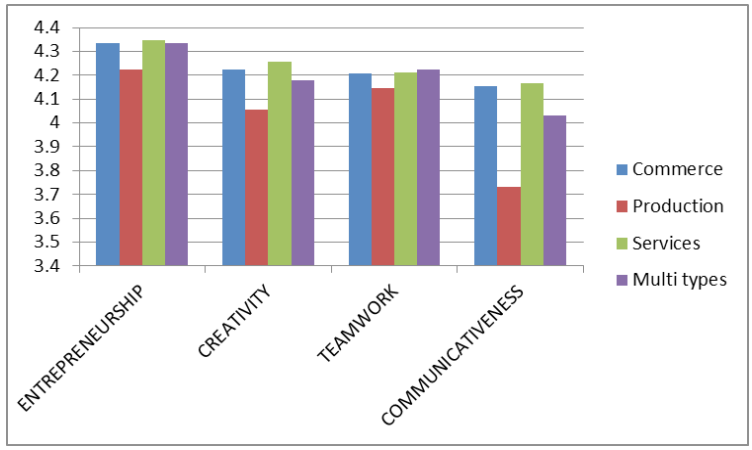

Figure 14.2. Results of the study for each of transversal competences (average values of assessment for particular competences) – according to types of economic activity. Source: Own results based on realized study.

4) Competence "communication"
The highest demand for this competence was observed among medium-sized enterprises (score of 4.09), followed by - among small-sized enterprises (score 4.05). Similar results were recorded among large (3.97) and micro (3.96).

Results of the study for particular transversal competences – results obtained in relation to types of economic activity:

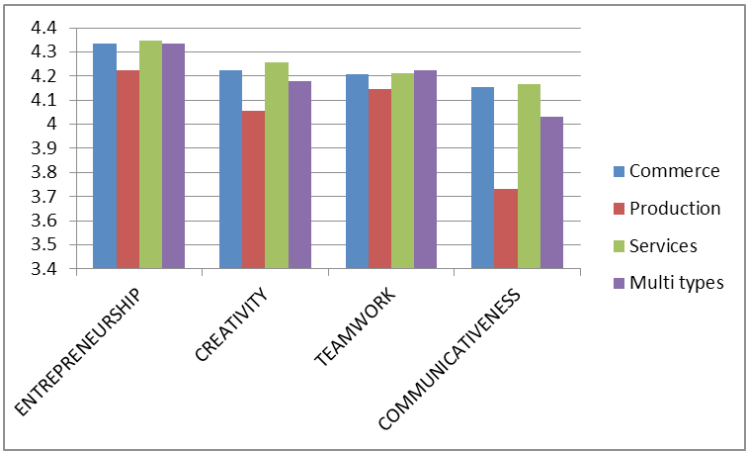

Figure 14.3. Results of the study for each of transversal competences (average values of assessment for particular competences) – according to types of economic activity. Source: Own results based on realized study.

14.9. Summary

The conducted study has allowed to realize the objective was to assess the demand of Polish entrepreneurs, Finland, Slovakia and Slovenia on selected cross-cutting competences. The survey results indicate a strong level of demand for the various transversal competences. The results of the study were substituted for each metric value, including, among others, countries participating in the survey, the business community and the size of the companies surveyed. This wide range of analysis allows to assess that the results of the study are significant in general economic and international influence.

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15. THE EXPERIENCES OF FINNISH ENTERPRISES IN DEVELOPEMENT OF TRANSVERSAL COMPETENCES AMONG STUDENTS

Hannu SIMI

15.1 FINNISH ENTERPRISES AND TRANSVERSAL COMPENTECES

15.1.1. Finnish enterprises and practical teaching

The Finnish education system is tightly regulated by legislation, but in practice the knowledge can be acquired from many sources and prove it with skills demonstrations and competence-based qualifications. Learning at the world of work enhances student´s employment opportunities. Learning at the workplace gets a good use of the transversal skills which have been acquired during preliminary studies at school. These transversal skills help to create good practises at the workplace.

Education providers must plan their operations according to needs of working life. In general, the education system is moving towards an evidence based model where students show in practise what they have learned and what they can do. Providers educate world of work guides who take care of students during their world of work periods.

The teachers at the educational institutions do the practical job. All cooperation with the world of work is based on their artivity. Actors at the working life define the competencies needed in working life. There is no better knowledge about qualifications needed inside the school than there is at the workplaces.

The cooperation at the world of work must be well planned beforehand. On the job learning should be structured. A student must have clear picture in advance what kind of skills is possible to learn at the workplace and which parts of the degree a learnig module is suitable.The Finnish education system is tightly regulated by legislation, but in practice the knowledge can be acquired from many sources and prove it with skills demonstrations and competence-based qualifications. (Laki ammatillisesta peruskoulutuksesta 630/1998). Vocational education and training and its supervision practices are nationwide in Finland. Locally defined are the needs for labor in different branches. Also provincial forecasts and models are used and made locally (Finnish Education in a nutshell (2012). Ministry of Education and Culture, Finland).

Training organizations do not have possibilities to invest all new technology and new machines. It is best to provide the basic qualities at vocational education institutions and learn the use of new technology at the workplace. Schools provide grounds for expertise and focus to prepare students to acquire good learning capability. Learning at the world of work enhances student´s employment opportunities. Problems to get a job are common for student´s who are not acquired adeguate work experiece during their studies (Laki ammatillisesta peruskoulutuksesta 630/1998, Laki ammatillisesta aikuiskoulutuksesta 631/1998).

Finnish enterprises have used the work oriented learning for a long time. Many large enterprises had their own vocational schools who were inside the company and all the students were then recruited to the company. Nowadays companies do not have educational units anymore. All higher education providers are now private organizations in Finland. Most of the Vocational Education providers and owned by the municipalities and municipal federations. There was a phase when learning and training happened at school in laboratories and workhalls. (Government's Decree on Universities (770/2009, Ammattikorkeakoululaki 932/2014).

Nowadays working life is changing so fast that the model has changed to learning at the world of work. Student go to work to enterprises and teachers guide them at the world of work. Learning at the workplace gets a good use of the transversal skills which have been acquired during preliminary studies at school. These transversal skills help to create good practises at the working place. We have a very strict regulation at the world of work. Students cannot enter to work environments which are dangerous. A student must also pass several exams before working life period. There are issues about first aid, work safety and hygiene before entering the workplace. (Finnish Education in a nutshell (2012). Ministry of Education and Culture, Finland).

We need new ways to study and change the structure of the workforce according to needs of the working life. Learning must be collective because enterprises need workforce which can work together and create new products. Organizational learning is getting all skills from the group together and targeting them toward new goals. With the new ways of learning it is possible to change the structure of the workforce rapidly according to needs of the working life. Especially adult student are the resource from which it is possible train new workforce to branches which need new workforce.

15.1.2. Students and transversal compentences

Vocational education and training in Finland is generally higly valued and at a high level. Valuation is affected by economic cycles. In conditions of economic recession and high unemployment valuation is generally decreasing. In economic upturn it is increasing. Finland is one of the few countries in Europe where about half of the age group goes after undergraduate studies directly to vocational education (http://tilastokeskus.fi/til/aop/tau.html).

Today's working life places a serious challenge to students who enters the working life. Education providers must plan their operations according to needs of working life not according to their own resources, premises and students wishes. Students will learn general working life skills during their studies and many courses in many study programs. The number of evidence based qualifications is increasing. In general, the education system is moving towards an evidence based model where students show in practise what they have learned and what they can do (Finland, a land of solutions (2015). Strategic programme of Prime Minister Juha Sipilä´s government).

The know-how is important not the way it has been as acquired. The student must cope with changes in the world of work and at the same time to experience success in life, be a good friend to other students and a good colleague to others. Each student is a change maker and the destination change, whether we like it or not. We can only affect our attitude and the way we deal with change. Companies and enterprises want their employees to be skilled, motivated and development minded. Companies need different personnel in their different life cycles and their knowledge needs must and will change according to changes in the work environment (Finnish National Board of Education, 2011). Education, training and demand for labour by 2025. Anticipation results on future jobs end education needs).

At the workplace students must be aware of their social values and develope their expertise and capacity for change and uncertainty tolerance. In a dynamic enterprise environment there ara a lot of information but a little knowledge. A student who goes to a learning period to workplace must learn the links between different parts of information to get the knowledge out of it. One of the important skills is to understand the strategic connections between little pieces of information. One part of learning at the world of work is also to see the opportunities what

are there at the working place. It is very difficult to predict what is important and what is not. In a modern business world things change very fast and there are not anymore chance to tune up the corporate engine more and more. A student must be innovative to find new possibilities to himself and also to the company. In many cases finding new solutions is doing. And the method is trial and error. We are constantly finding out what works and what doesn't. We can describe that in studies in a consept "episodic doing". The goal of studying at work is like weaving our way to the final target. There are all the time little projects going on. (Puhakka, Vesa (2002).

A post modern digital economy is turbulent, unstable and very complex. And work is constantly doing, making mistakes, interacting with each others. We have now experimentally organized economy. We know that we want to do something useful and valuable but we do not know what. At the studying period at the world of work it is important to make very complex things simple, communicate understanding and ways to create passion and desire to do a job as well as possible. A rational way to think is not enough because in rapidly changing world we cannot plan things enough to make decisions. There is no balance and one has to manage in a constantly unbalance world. One must stand complexity and see new possibilities. The ministry of Education and Culture has collected information how from the learning periods at the world of work. Also enterprises do their own share. (Ministry of Education and Culture. Address: http://www.minedu.fi).

There must be enough resources for the cooperation with the world of work. There must be enough time to visit at the working place and to discuss important matters. The responsibility is at the Educational providers side. Providers educate world of work guides who take care of students during their world of work periods. One of the aims is to create common non-formal innovation system. It is also important to work among enterprise clusters. We can create a learning area which delivers common business culture and which delivers welfare and competitiveness. Educational objectives serve also different industries and services. There is less industrial production and more services in the future. Business services are growing rapidly. Also more traditional industrial production is served as service or part of service. There will be also new ways to make industrial products. This is part of the world wide process. That means also changes at the vocational education. International relations and studying abroad is an important part of Vocational education. Studying and training abroad is the key to seeing learning and work possibilities. Every student should have the opportunity to have a learning period abroad during their studies (Finnish National Board of Education. Address: http://www.oph.fi).

15.2. ROLE OF THE TEACHERS AT THE WORKPLACE

15.2.1. More cooperation with the world of work

The teachers at the educational institutions do the practical job. All cooperation with the world of work is based on their activity. The cooperation at the vocational education works better than cooperation at the higher education. That is because of the longer tradition of the Vocational Institutions. Succesfull learning at the world of work needs active teachers who have good relations to the working places and who know what is possible to learn at the world of work. Interaction between teachers and the personnell at the working places is very important. A lot of information change happens also unformally in normal activities every day Finland, a land of solutions (2015, Strategic programme of Prime Minister Juha Sipilä´s government).

Finnish education system is moving towards learning at the world of work. Vocational education leans on knowledge based learning and freedom of student to flexibly choose a learning path in subjects which suits best for individual needs. There will be more cooperation with

the education providers and the word of work. The representatives of the world of work will be active members at the cooperative organs and advisory boards. Learning at the workplace must planned carefully before learing periods. The responsibilities between every actor must be clear. Important factors are safety at the worklace and good guidance. Division of the learning contents and the resources and the real time cooperation at the networks. The model will be the same also at adult education. The representatives of the world of work will be members at the qualification committees who accept the Basics of qualifications. (Ministry of Education and Culture (2/2016). Key projects reform Finnish education).

As part of the upper secondary vocational education and training reform, the Ministry of Education and Culture prepares a training agreement model in vocational education and training. The objective of the training agreement model is to promote workplace learning and practical ways of completing qualifications by creating flexible paths for the students on workplaces. The training agreement model aims to shape work-centered learning currently in use into a system that is as uniform as possible. It includes methods for increasing training provided on the workplace and for controlling the quality of workplace learning. Introduction of a training agreement is suitable for all degree and non-degree students in vocational education and training. The training agreement would cover learning not structured as an employment relationship on workplaces or in other similar environments (Aaltola, Maija & Rauno Vanhanen (2016)).

The workplace learning is planned and agreed upon one module at a time. At the same time, a decision would also be made on whether a training agreement or an apprenticeship contract would be concluded between the education provider, the workplace and the student. Workplace learning arranged one module at a time will support the student's flexible transitions between the educational institution and workplaces on one hand, and between a training agreement and an apprenticeship contract on the other. The possibility of concluding contracts of different durations will also make it easier for companies to offer learning placements. The administrative burden of workplaces will be lightened. The education provider should coordinate working life cooperation and organise the services needed by the workplaces in a centralised manner. E-services and uniform contract templates should be provided at the national level. Training agreements should be concluded electronically between the parties as part of the student's individual study plan without the need for a separate contract document (Aaltola, Maija & Rauno Vanhanen (2016)).

The education providers would be tasked to control the quality of workplace learning and to assume responsibility for the assessment of competence and awarding of degrees as stated in their authorisation to provide education. The division of education and training into different forms of education and ways of obtaining qualifications will be abandoned. Training provided on the workplace would be organised following a single uniform operating and funding model that would be competence-based and customer-oriented. The learner would remain registered as a student with the educational institution throughout his or her studies. (Aaltola, Maija & Rauno Vanhanen (2016)).

15.2.2. More doing at the working place than learning at school

Actors at the working life define the competencies needed in working life. There is no better knowledge about qualifications needed inside the school than there is at the workplaces. Working life needs change rapidly. Modern trends also form the skills needed at the working place. Urbanization has a huge impact to skills needed at the workplace. The increased need for the services means need of experts in service industry. This means that education structures need

to be changed. Development of information technology make also cities more important than before. Cities get more investments and they are increasingly focusing on firms, services and people. In particular, more and more financial services are needed in cities. The world around us is formed from perceptions not so much from physical environment. A student has a vision and a dream of professionalism. The outcome of the studies is the starting point of the studies. Efficient and at the same time safe way to study is created by learning from good practices (Pohjois-Pohjanmaan liitto: Koulutuksen ennakointi. http://www.pohjois-pohjanmaa.fi/aluesuunnittelu/ennakointi).

One has to know what work is done and how things are taking place at the workplace. There has to be pre-operational models that they can become a real situation. A responsible operation means co-operation and working together. There must be respect for the student as an individual. Also there must be possibilities to study at the working place every day not only during the terms. The contents of the studying define the learning, the "learning content is a king" in this matter. To be a succesfull student means understanding that the lanquage is action and a trust to own know-how comes from qualifications one can do.

We are living in a society of networks where are more independent professionals who are ready to travel and work independently every day of are week and every hour of the day 24/7. There is a need for professionals who can do projects and go to a new project somewhere else, maybe to other area or country. A wandering professional goes around carrying all his know- how and skills with him. Every place is open all the time and customers a waiting services at every hour. There is a consept for that society; it is Woody Allen - John Wayne –society (Mannermaa, Mika (2008)).

An Educational provider has to take care of the changes in a society and employment market. The cooperation at the world of work is part of the strategy. There are many ways to provide services at place, in network, self learning and at the world of work. The assesment of what students can do is done with the evidence based qualifications. There is also other services that educational providers produce. Providers offer Research and developement and testing services to enterprises and workplaces. It is also possible to make first production items at the Vocational of Universisty unit and test it before large scale production in companies. All of this can be part of the teaching and learning processes. In the future educational units become portals to different educational and learning services. For example educational units can serve aprenticeship training services and evidence based examns can be bought from other education providers (Ministry of Education and Culture (2012). The Education and Research and Developement Plan).

Tacit knowledge is also more and more important in modern society. Tacit knowledge is experiences and views from the work to hand craft skills. It is very difficult to describe and it transmits in communities, cooperation and personal interaction. It has been estimated that tacit knowledge is very important to decisions that a made at the workplace. In decisions about the future operations it is crucial. It comes to consideration that typical free time activieties, common trips and time together with workmates are considered production factors. Game industry is a good example of that. Also the importance of personal relations and contacts one gets during working life periods are very useful later in working life (Puoskari, Tuula & Simi, Hannu (2012), Laadullinen ennakointi taideteollisuusalalla, Opetushallitus 2012).

Education evaluation defines the quality of teaching afterwards. Evaluation system rewards education providers who do their job well. There is a certain percentage of funding which is paid

according to results. It is called result based funding (Foresight and Effective Evaluation 2020. The Strategy of Finnish Education Evaluation Centre. Juvenes Print – Suomen Yliopistopaino Ltd, Tampere). In the future the result based funding will be 50 % of all funding. That means that those providers who cannot get good results will go out from market sooner or later. There is all the time critical discussion in evaluation. (Luonnos hallituksen esitykseksi eduskunnalle laiksi ammatillisesta koulutuksesta ja eräiksi siihen liittyviksi laeiksi (8.11.2016). Opetus- ja kulttuuriministeriö 8.11.2016).

The needs of working life change rapidly all the time. Education must respond to those needs as soon as possible. An education system must anticipate future needs. The representatives from the world of work state that so called asset skills which are actual professional skills shoud be at a sufficient level. The transversal competences enable the use of professional skills. Without good transversal skills it is not possible to be succesfull at the wold of work.

The cooperation at the world of work must be well planned beforehand. On the job learning should be structured. A student must have clear picture in advance what kind of skills is possible to learn at the workplace and which parts of the degree a learnig module is suitable. Educational providers mus constantly look for new suitable job learning places and invest in the development of work-based learning.

Recent cuts in Funding at the vocational education set a serious challenges to education and training providers. At the same time when there are cuts in funding should also be investments in develoment activities to find new ways to provide education. According to large research material qualifications and learning in the workplace are a natural things to do today's work. Training organizations should pay more attention to how work-based learning can be carried out to the highest quality. The results of work-based learning is worth to model and validate (Luonnos hallituksen esitykseksi eduskunnalle laiksi ammatillisesta koulutuksesta ja eräiksi siihen liittyviksi laeiksi (8.11.2016). Opetus- ja kulttuuriministeriö 8.11.2016).

In every case the work oriented learning is a trend nowadays in Vocational education. The direction is good and there are a lot of effort to develope new ways to learn at the world of work. Also Employers labor organizations and workers organizations support learning at the workplace. From the international perspective Finnish runs at the forefront of the development of working life orientation.

Good professional skills, awareness of other cultures and foreign languages skills are very important skill nowdays. Also teacher´s professional contacts are important and can not be underestimated. Apprenticeship training is a good way to funding studies. Unfortunately because of long lasting economic recession, companies are not willing to enter into apprenticeships, especially with the young students. At the Universities of Applied Sciences good workplace connections got better after the post graduate diplomas. There are still great differences at the working life.

The Universities of Applied Sciences and Vocational Education providers serve the regional developement by improving the regional influence. Serving the region's enterprices and working life orgnizations throug applied research, in particular research duties carried out together with small and medium sized enterprises. Even thouht teacher´s are higly skilled professionals there are possibilities to improve teachers' entrepreneurial skills and entrepreneurial spirit. Students should have positive attitude towards entrepreneurship and an understanding of internal entrepreneurship (Pohjois-Pohjanmaan liitto: Pohjois-Pohjanmaa – Nuorten maakunta,

Pohjois-Pohjanmaan maakuntasuunnitelma 2040 ja maakuntaohjelma 2014-2017. (http://www.pohjois-pohjanmaa.fi/aluesuunnittelu/maakuntaohjelma_ja_-suunnitelma/maakuntaohjelma_2014-2017).

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16. IMPACT OF INTERCULTURAL FACTORS ON ACQUISITION OF TRANSVERSAL COMPETENCES BY STUDENTS – FINNISH EXPERIENCE

Katarzyna JÄMSÄ

16.1. Definition of Culture Iceberg and Intercultural Factors

The theme of this chapter is closely related to both competency management, a part of knowledge-based economy and to the topic of intercultural competences, which is a part of intercultural communication.

According to Antczak, the key skills in the knowledge-based economy are those which make it possible to operate in the global economy (Antczak 2013, p. 56). Additionally, House (2004, p.1) reminds us that "Ample evidence shows that cultures of the world are getting more and more interconnected and that the business world is becoming increasingly global. As economic borders come down cultural barriers will most likely go up and present new challenges and opportunities in business". Thus, in this age of globalization, intercultural competency becomes a skill essential for everyone, including business leaders, workers, education leaders and students, regardless of their fields of studies.

The author of this chapter will try to answer the key question education leaders face - how to best prepare students to meet the requirements of the global business world and how to equip them with intercultural competences crucial when working in a multicultural environment. The author will first describe the nature of culture, intercultural factors and cultural profile of Finland in order to explain, in the next step, how preparing students to become interculturally competent develops their transversal, so called, 'hidden' skills required by today's business world.

Culture is a very complicated concept and it reflects on all aspects of human existence. It includes everything created by human minds and hands. „Culture cannot be seen, heard, felt or tasted. We can only see its different manifestations in the form of differences in human behaviour, rituals, traditions, customs, but we never see culture as a whole. Observing differences in behaviour we understand that they are caused by cultural differences. This is where the study of culture begins" (Krasnov 2008, p.4).

Several authors have compared culture to an iceberg, which has a visible part on the surface and an invisible part below the surface. The upper part of the iceberg represents those elements of culture, such as food or clothes, which we can easily notice. The much bigger portion of an iceberg, hidden under the surface of the water represents the elements which are not so obvious to see; for example, the reason why someone eats and dresses in a certain way. Failure to understand and recognize the parts of culture that belong to this latter, as well as understanding how they influence each other is the main reason for misunderstandings during interactions with other cultures.

Intercultural factors come from different components related to culture and the cultural environment and they have a strong impact on intercultural communication. Intercultural communication is seen as a „combination of different forms of relations and communication between individuals and groups belonging to different cultures" (Krasnov, 2008). It is important to understand and consider the cultural factors inherent to each individual and each group belonging to a given culture in order to adapt communication strategies to those cultures. To develop

skills as communicators, we must gain practical knowledge of the factors which make communication across cultures succeed or fail. According to experts in the field, there are 8 main intercultural factors: cultural identity, racial identity, ethnic identity, gender roles, self-identity, social identity, age and roles identity, as seen in Table 16.1.

Cultural identity	Krasnov (2008) defines culture as a deposit of values, attitudes, knowledge, experience, beliefs, social hierarchies, religion, roles, notions of time, concepts of the universe and material objects and possessions acquired by a group of people in the course of generations through individual and group endeavour. According to Allwood (1985, p.15), "both participating and studying intercultural communication require taking into consideration the differences in understanding values and attitudes that people with different cultural backgrounds can have". The author also reminds that in most of cultures, religion is that main framework for human's behaviour.
Racial identity	This factor is connected with one's affiliation to a particular race and with racial stratification, the - usually unconscious - social classification of people based on race. This obviously effects the interaction with people of different races. The forces that keep the idea and practice of racial stratification alive are called racism (Thomson R.T., Carter R.T. 2012). Racism is related to the individual act of prejudice and discriminatory behavior. Racism is "the most widespread form of prejudice (...) Prejudice is always negative and hostile, it is a thoughtless negative and hostile, it is a thoughtless negative attitude towards the whole group or its majority" (Krasnov, 2008, p.26) According to an article by prof. Velasco (2015), "it is necessary to get engaged in exercises that confront racism head-on". For example, his method, called E.A.D. confronts participants of his study method with racism, which allows to understand the mechanism of prejudice and opens the gate to effective intercultural communication.
Ethnic identity	On the micro level of intercultural communication, we can distinguish inter-ethnic communication – cultural heritage of ethnic groups is handed down from generation to generation and preserves their identity within macroculture, meaning e.g. American-, European-, African – culture (Krasnov, 2008). "A group is an ethnic group when certain of its cultural characteristics are used to socially and politically organize it and when this organization is allowed to continue for a relatively long period of time" (Allwood, 1985, p.2). In intercultural communication it is important to be aware of the ethnic prejudice, e.g. to workmates, neighbours from different ethnic group, e.g. prejudice to a gipsy family living in our neighbourhood (Krasnov, 2008).
Sex and gender	"Sex is determined by genetic codes that program biological features (...). Gender is considerably more complex than sex. It can be described as a cultural meaning of sex" (Krasnov, 2008, p. 8). A culture constructs gender by assigning the activities or identities to each sex (e.g. the colour pink or dolls are for girls) and then applying them to the social life. Thus, gender is a social creation, not an individual characteristic. Communication between members of different cultures is affected by how different societies view the feminine and masculine roles. Each culture has gender stereotypes, e.g. in some countries women are supposed to take care of children, stay at home and obey the husband while in other cultures (e.g. in Finland) the equality of men and women is stressed both in business and family life.
Individual identity/ self-identity	Self-identity shows the independent personalities esteem themselves. Each person can be open-minded or conservative, extravert or introvert, well-educated or less educated, etc. As an example, one could analyse the level of someone's education: "the higher its level, the easier is the adaptation process. Education widens the inner capacity of people and the more complicated is the vision of the world in a person, the easier they perceive innovations" (Krasnov, 2008, p. 43).

Social identity/ social class	The social identity is related to social class - the level of society that person was born into or the level of society which the person is joining while growing up (e.g. by gaining some education level or work position). We can distinguish working-class, middle-class and the upper-class. There are many differences in communication within and between these social classes: e.g. in the attitudes towards art, sports to name a few. Krasnov (2008) reminds that power distance between social classes is different in different cultures. For example, in Finland people from different social classes are rather equal while in Eastern EU countries the distance between them is considered to be high.
Age	According to Krasnov (2008) children can easily adapt to new cultural situations, school kids may already have difficulties and elderly people are practically incapable of adapting to another culture. Different age groups handle differently e.g. the culture shock, which is always a painful process. Culture shock involves the breaking of stereotypes, personal growth and physical and psychological resources. Younger people, however, benefit from it as they gain a new vision of the world, learn to accept cultural diversity, to tolerate new and strange things and finally to be able to live in a constantly changing world.
Roles identity	Each individual has some focus of own identity and can chose which characteristics become the primary components of their identity – is it occupation, own interests, family role, ideology, gender role, age role, regional affiliation or something else, chosen to guide the ways of being. "What they have chosen to identify themselves with will determine to great extent their attitudes, norms and values and will thus also colour their behaviour in different activities" (Allwood,1985, p.13).

Table 16.1. Intercultural factors and their meanings. Source: Own elaboration based on Krasnov (2008), Velasco (2015), Allwood (1985), Thomson R.T., Carter R.T. (2012).

This table shows how these eight intercultural factors affect cross-cultural communication. We can summarize that the general feature of all levels and types of intercultural communication is not being conscious of the cultural differences of its participants. Most people perceive the world as what could be described as 'naïve realism'; they think that their style and way of life is the only possible and correct one and their values are understood and shared by other people (ethnocentrism). Krasnov (2008, p.7) argues that "only meeting representatives of other cultures and seeing that habitual models of behaviour stop working, they pause to think about the reasons of their failure to communicate". Bhawuk and Brislin (1992, p.416) summarised the skills needed to succeed as follows: in order „to be effective in another culture people must be interested in other cultures, be sensitive enough to notice cultural differences, and then also be willing to modify their behaviour as an indication of respect for the people of other cultures".

16.2. The Cultural profile of Finland

The cultural profile of Finland can be described using different frameworks related to intercultural communication. Hall (1987), for example, divided cultural differences into two categories: low-context cultures and high-context cultures. The notion of context here refers to the fact that when people communicate, they assume that the listener knows about the subject under discussion. In low-context communication, the listener knows very little and must be told practically everything. On the other hand, in high-context communication the listener does not need to be given much background information as he/she is already 'contexted', that is, has been given enough information to understand the context.

Finland and other Scandinavian countries belong to low-context cultures: they tend to use a direct verbal expression style which means:

– the situational context is not emphasized, important information is usually carried in explicit verbal messages,
– self-expression, verbal fluency and eloquent speech are valued,
– people tend to directly express their opinions and persuade others to accept their points of view.

Hoftstede (1986) compared work-related attitudes across more than forty different cultures and found 4 consistent dimensions of cultural values held by people. These offer a good starting point for thinking about values: individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity.

Based on Hofstede's Cultural Dimensions, Finnish culture can be described as follows:
– individualistic culture which tends to emphasize the self-concept in terms of self-esteem, self-identity, self-image and self-expression; the individual is treated as the most important element in any social setting; personal goals supersede group goals and competition is often encouraged; the families in such cultures include only parents and children (small, nuclear families); children perceive their "I" separately from other people; the goal of upbringing is to make a child independent as soon as possible.
– low-power-distance culture: horizontal in terms of social relationships; people in this culture tend to minimize differences of age, sex, status and roles; instead, individual differences are encouraged; such values as equality and individual freedom are important; the emotional level between higher and lower level is very short; employees can always address their boss with a question or a critical remark; disagreement or active contradiction is considered normal.
– low-uncertainty-avoidance culture: oriented to cope with stress and anxiety caused by ambiguous and uncertain situations; the culture tends to better tolerate deviant behaviours and unusual stress connected to them; as a result they take more initiative, show greater flexibility and feel more relaxed in interactions; in such societies people think they can solve problems without formal rules; therefore formal rules are established only in case of utter necessity; in these cultures – for example – teachers are not seen as experts with answers to all questions but can say "I do not know" without appearing incompetent; difference in opinions between teachers and students is a sign of critical thinking of the latter and is usually encouraged;
– feminine culture: members of feminine cultures tend to emphasize the quality of affection, compassion, emotion and sensitivity; gender roles are more equal (men are not expected to be dominant in the society) and people are more capable of reading nonverbal cues and tolerating ambiguous situations.

From the above analysis, we can assume that the Finnish cultural profile will change through meeting representatives of other cultures with different habitual models.

For example, meeting representatives of collectivistic cultures will develop Finnish students' teamwork skills. The same way, meeting representatives of high-context cultures will enable individualistic Finns to value more the group sense and to use more "feelings" than "logic", when presenting their ideas, especially within international groups. This helps to upgrade the communicativeness as a skill important when dealing within global teams.

In general, meeting other cultures enables people to discover a 'new undiscovered world' in which the same things can be done in different ways – this develops many other 'hidden skills', like creativity, entrepreneurship, etc.

16.3. Acquisition of transversal skills through international experience

In 2012–2013, CIMO conducted a survey on how recruiters value skills acquired through international activities and what will be the significance of international experience for business life in the future general. Employers' views and expectations concerning employees' international competence were surveyed (CIMO 2014).

'Hidden Competences', the report based on this survey revealed that only slightly more than 50% of Finnish employers with international operations and slightly over 10% of those without international operations consider international competence important. However, a closer look at the results reveals that 90% of employers regard international experience an asset. Employers were asked about the kinds of competence they value when recruiting new employees and about the kinds of skills they understand as developed through international experience. Answers to these questions showed that many essential skills that employers required from new employees were exactly the same as those they associated with international experience. These results show that many skills acquired through international mobility are what employers are looking for in order to be able to respond to future challenges. There is, however, a big problem with the recognition of international experience: employers are not able to link the candidates' competences to skills acquired through studies, work placements or practical trainings abroad. This shows that the learning outcomes of international mobility are hidden.

The most important finding of the survey is that skills and competence developed through international experience should be made more noticeable - should be better identified and described. The obvious benefits which are usually associated with mobility, like language skills, cultural skills and tolerance are important learning outcomes, but from the employer's perspective, they provide a limited picture of the results of international mobility. Thus, in addition to the above learning outcomes, attributes such as productivity, perseverance and curiosity would be noticed as 'hidden skills' developed through participation in international activities. Therefore, the wider picture of „extended internationality" should be discussed.

The report "Hidden Competences" introduces an extended understanding of international competences while pin-pointing skills and competences that might be in high demand in the future. While language skills, cultural knowledge and tolerance have often been understood to be the basis of international competences, new factors emerged through this publication. The extended understanding of international competences encompasses e.g. productivity, resilience and curiosity. „These extensions to the traditional understanding of term, depicts current notions of employers in regards to what the future or working life and international competences could be perceived as. "Even if the employers still do not value international experience as such, it is still bundled together with many other skills and qualities that employers place great value on (CIMO 2014, p. 23). Many of those attributes that the employers are looking for when recruiting are in fact those they link with international experience. Among others communicativeness, teamwork (cooperation), creativity and competences related to entrepreneurship have been diagnosed in the report and linked with the international experience.

As the research concludes: "skills and knowledge that result from international experience are the kind of competences that the labour market needs to be able to face future challenges successfully" (CIMO, 2014, p.31). What we can learn from this project is that both working life and the students themselves should learn to recognize and show their hidden potential to achieve success. The world of work needs new understanding about the competences demanded by organizations in the face of current challenges.

16.4. Intercultural Factors vs Acquisition of 'Hidden Competences' through International Experience

In the framework of knowledge-based economy, knowledge is a "set of content (information and data) collected and fixed in human mind which is a derivative of experience and learning processes. By processing the collected information in mind, human being enriches it by new items; by learning, human being shapes it; and by gaining experience, human being creates knowledge" (Mikołajczyk 2003, p. 25). In the international context this would mean that by gaining international experience, a human being creates international knowledge (intercultural competence) which is linked to transversal competences.

For education leaders it is a crucial task to prepare students to become interculturally competent before their graduation. Education institutions must, however, remember that not all the students have the same ability to acquire this essential competence through international mobility. For this reason, other forms of international experience should be offered at the home institutions to 'non-mobile' students as part of the so-called 'internationalization at home'.

The education institutions should analyse differences in cultural profiles of their students and understand which factors influence the students' abilities for gaining international experience. Such differences have been analysed, e.g. in CIMO's report 'Living and learning-exchange studies abroad' (CIMO, 2013), which was done with regard to background/cultural factors and which shows the driving forces for going abroad and the barriers which stop students from going abroad. The study clarifies how gender, age, the roles identity and other intercultural factors affect the students' abilities for gaining international experience and - in a broader understanding - for acquiring transversal competences through this experience.

For instance, the report shows some interesting facts by telling that "women take more often than men part in educational exchanges" (CIMO 2013, p.20) (gender factor) or that "younger students participate more often in exchange mobility than older students" (CIMO 2013, p.21) who tend to attribute a bigger importance to motives of academic quality than motives concerning personal growth, language skills and intercultural understanding (age factor). It also shows that Finnish outgoing students favour the neighbouring countries like Estonia and Sweden, where the culture is similar to their culture. Study abroad experience is more common among students from a higher social background than among students from a lower social background (social identity factor). Personal relations are the most frequent reason for not going abroad. Also, non-mobile respondents are often those who study 'hard sciences', including fields like medical sciences, mathematics and Information Technology, whereas respondents studying 'soft subjects' like humanities, social sciences or business are more mobile on the average (roles identity factor).

The conclusions of the report show that "mobile students value their study abroad experience very highly" (CIMO 2013, p.34). Especially making new friends, learning languages, gaining cultural understanding and improving personal skills are very important for developing new competences be these students. "But even students who do not go abroad value exchange mobility positively" (CIMO 2013, p.33). Thus, these non-mobile students need more attention and better access to international experience at their home institution in order to acquire intercultural competences through e.g. so called "internationalization at home", which includes courses with international focus, international buddy projects, social activities with foreign students, etc.

We can conclude, that the internationalisation of education plays an important role in today's world. Every university leader should remember that intercultural competency gained through international experience is a key competency which develops other 'hidden skills'. Even if the internationalisation of education is challenging for teachers, staff and local student groups, multiculturalism calls for lots of reforms in education and competency management. Along with the revolution of education strategies, universities become more sensitive for cultural, social, ethnic and linguistic diversity. Such institutions with multiple values can work as a development environment for transversal competencies required by today's global business world.

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17. MATRIX OF THE DEPENDENCIES OF PRACTICAL TEACHING METHODS AND METHODS OF TEACHING TRANSVERSAL COMPETENCES

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17.1. Introduction

The chapter presents the matrix of the dependencies of practical teaching methods and methods of teaching transversal competences, which was developed on the basis of the report concerning methods of teaching transversal competences and practical teaching methods, the report on the analysis of demand for transversal competences among entrepreneurs and expert evaluations of all the Partners participating in the project *The Acceleration Method of Development of Transversal Competences in the Students' Practical Training Process*. The first part of the chapter contains an introduction to the selected aspects of teaching transversal competences. The second part features a description of activities that have been performed so far in the project and the result of the project affecting the development of the final version of the matrix. The next subchapter characterizes a set of steps which allowed to develop the final version of the matrix and the last part is a compilation of conclusions and guidelines to be followed in further work.

Almost all entrepreneurs, businesspersons and leaders understand the significance of acquiring soft competences, including transversal ones: entrepreneurship, creativity, teamwork and communicativeness. When acquiring competences in formal learning, it is essential to select practical teaching methods whose potential is to accelerate the acquisition of transversal competences. The issues related to the effectiveness of teaching competences are closely linked both to the question of investing in people, teaching methods, productivity and the efficiency of formal and nonformal learning.

The issues related to the evaluation of the effectiveness of teaching refer to a practical sphere, but they are also embedded in theoretical and scientific foundations for which detailed analytical models are often dedicated (Welfe, 2007, p.18; Fazlagić, 2014, p. 152). Improving transversal competences by students aims primarily at preparing them to function on the job market. The first contact that students establish with the business environment is through work placement, which should both expand their experience (Balcerak et al., 2005, p.99) and benefit employers, e.g. By the ability of absorbing knowledge by the company (Jashapara, 2014, p.167; Zgrzywa-Ziemak, Kamiński, 2009, p.61). Transversal competences discussed in the research are ranked among those skills which are most often sought after by employers. The performance of an organization's tasks requires an effective set-up of human teams and use of employees' potential to work in a group (Galata, 2008, p. 37). Also the influence of effective communication on the proper execution of business tasks is essential (Winkler, 2008, p. 178).

When analyzing practical teaching methods which support the development of transversal competences, one should view teaching as a process and focus on the aim that it is supposed to attain, i.e. To prepare students for their professional work in a dynamically changing market context (Leja, 2013, p. 189). Considering the factors which increase employees' effectiveness, the source literature lists, among others, learning through experience, investing in individual contacts, setting information priorities, stimulating initiative (Davenport, 2007, p. 126; Kouzes, Posner, 2015, p.199), opening to knowledge gathered from the context (Zgrzywa-Ziemak, p. 61), process values focused on clients (McCormack, Johnson, 2001, p. 95) developing and nurturing talents (Mikuła, 2013, p. 183).

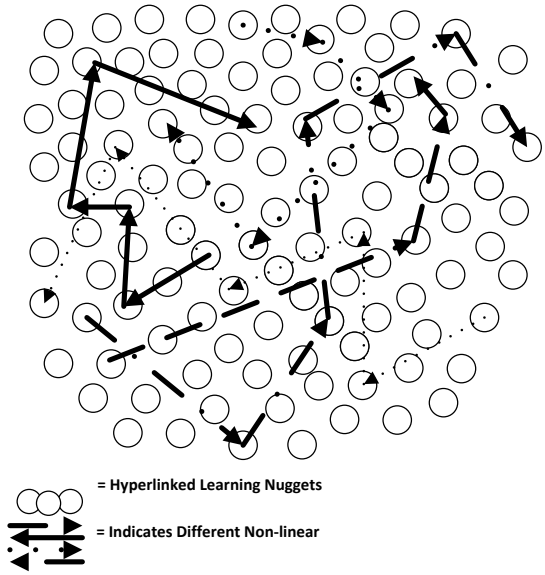

Figure 17.1. A Self-Organizing Ecology Model. Source: Morgan and Adams, 2009, p. 136.

As of now, no ranking of practical teaching methods affecting the increment of transversal skills has been created. There are, however, scientific articles which feature, among other things, practical advice for developing, designing and delivering effective soft skills programs (Adams, 2014). Improving the level of transversal skills is congruent with with the Self-Organizing Ecology Model (Morgan and Adams, 2009, p. 136) pointing to hundreds of students' nonlinear education paths. Each student, in accordance with the model, can begin learning transversal skills in any place and in any place he/she can end it.

J. Adams also attracts attention to factors affecting soft skills, which may be referred to transversal skills described in the present book. The Soft Skills Learning Triangle is a set of factors specifying the possibilities of using IT tools in executive development learning situations (Adams, 2010). The model embraces three key notions: content, context and the leader, which are closely linked to each other. It is worth mentioning that the Soft Skills Learning Triangle presents a narrow point of view related to the increment of transversal competences, since, in principle, it limits the selection of practical teaching methods to e-learning only.

The project *The Acceleration Method of Development of Transversal Competences in the Students' Practical Training Process* contains an evaluation of all 85 practical teaching methods diagnosed during the performance of previous tasks in all the Partner countries, i.e. Finland, Poland, Slovakia and Slovenia. The result of the evaluation, which took into account the indicator of importance of transversal competences for entrepreneurs, is the matrix of the dependencies between practical teaching methods and an increase in students' transversal competences.

17.2. Steps taken prior to the development of the matrix

The following steps had been taken before the development of the matrix of the dependencies between practical teaching methods and an increase in student's transversal competences (until 30 April 2016):

- a review of the existence and use of practical teaching methods in the students' training process in the EU was performed (Finland, Poland, Slovakia, Slovenia),
- the degree of the importance, if any, of transversal competences in companies was assessed.

The results of the work were summarized in two reports:
- Report concerning methods of teaching transversal competences and practical teaching methods,
- Report on the analysis of demand for transversal competences among entrepreneurs.

The information obtained from the research was used to develop a matrix which presents the result of the evaluation of dependencies between practical teaching methods and an increase in students' transversal competences. Two aims for which a matrix was developed should be singled out:
- a general aim – development of the third stage of using the designed method (methodology of building a matrix of dependencies of practical teaching methods and teaching transversal skills),
- a detailed aim – establishment in the opinion of experts representing four selected EU countries what influence particular practical teaching methods have on the improvement of four selected competences.

The development of the plan of evaluating practical teaching methods in the aspect of an increase in the level of students' transversal competences was modelled on evaluation methods used in developing the house of quality (QFD) or evaluation methods used in some types of Delphi research.

17.3. Steps to take in order to develop a matrix

The matrix, which constitutes the third outcome of the project work, was created in a few consecutive steps, which are featured below.

Step 1. Summary of practical teaching methods identified in O1 and transversal competences featured in the project and defined also in O1.
The matrix's rows contain practical teaching methods (85 methods in 6 groups) and the columns contain 4 transversal competences analyzed in the project (entrepreneurship, creativity, communicativeness, teamwork). The template of the matrix is presented in Table 17.1.

Practical teaching methods	Transversal competences (K)				
	Entrepreneurship (E)	Creativity (Cr)	Communicative-ness (Com)	Teamwork (T)	Group of methods
Method M1					
Method M2					
Method M3					
...					
Method Mn					

Table 17.1. Template of the table used to juxtapose practical teaching methods and methods of teaching transversal competences. Source: Own elaboration

Step 2. Assignment of the coefficient of usefulness to transversal competences.
The assignment of the coefficient of importance to transversal competences allowed to make more efficient decisions in further stages of the ATC method design as to which practical teaching methods should be chosen in the first place when developing reference models of practical teaching which will be subject to testing. It is not possible to test all models of teaching processes.

Testing will be carried out in order to recommend student teaching processes with practical teaching methods selected in such a way as to enable students to enhance their chances to acquire or improve transversal competences. The results of the research described in the report of the O2 outcome were used to determine the coefficient of importance of transversal competences[14]. The competence most frequently regarded by entrepreneurs as the most useful are considered as the most important. The research evaluated the skills, which make up a given competence, and on the basis of this evaluation the indicators of usefulness for each of 4 analyzed transversal competences were determined.

The indicator of importance of transversal competences for entrepreneurs / employers was determined in accordance with the following procedure:

a) for each competence, the entire evaluations of all the skills which make up a given competence were added up,
b) for each competence, the average of all the summed-up evaluation was calculated, the average evaluation of specific competences was added up,
c) the quotients of b)/a) were calculated; the quotients are the indicators of usefulness of particular competences.

Table 17.2 presents a template matrix with the indicator of usefulness. As it results from the conducted analyses, the entrepreneurs from 4 countries, who acted as experts in the research, evaluated the usefulness of 4 analyzed competences in a similar way. The analyzed transversal competences are, in the opinion of entrepreneurs taking part in the research, equally useful. The evaluation of the usefulness of transversal competences will not have a significant influence on the selection of practical teaching methods for the designed student teaching processes in terms of a faster improvement of their transversal competences.

Practical teaching methods	Transversal competences				
	Entrepreneurship (E)	Creativity (Cr)	Communicativeness (Com)	Teamwork (T)	Group of methods
Indicator of usefulness	w1	w2	w3	w4	
Method M1					
Method M2					
Method M3					
...					
Method Mn					

Table 17.2. Form of the matrix developed as the O3 outcome including the indicators of importance of transversal competences. Source: Own elaboration; w - usefulness indicator of competence in the assessment of entrepreneurs.

[14] http://atcerasmus.eu/, 2016-07-15

Step 3. Assessment by partner expert teams covered an answer to the following question: does a given practical teaching method exert positive influence on improving the level of a given transversal competence and to what degree? The partner representatives, experts working in partner teams, determined whether there is any relationship between the use of a practical teaching method and improvement in the level of a transversal competence. They also determined how strong this relationship is. Each partner institution sent to Poznan University of Technology a version of the matrix filled-in by a partner team. The evaluation performed by the partners covered at least 2 employees of each partner institution.

The partners performed the evaluation in two variants:

a) variant 1: all 85 methods were evaluated – the methods were described in a report available on the project's website[15];

b) variant 2: only those methods which were or are used in partner institutions or are known by them were evaluated.

The evaluation of the strength of influence practical teaching methods exert on improving a transversal competence was performed using a three-grade scale {1, 3, 5}, where 1 is weak influence, 3 is medium influence and 5 is strong influence.
The procedure is presented in Table 17.3.

Practical teaching methods	Transversal competences				
	Entrepreneurship (E)	Creativity (Cr)	Communicative-ness (Com)	Teamwork (T)	Group of methods
Indicator of usefulness	w1		w3	w4	
Method M1	u1,1=1			u1,4=1	
Method M2	u2,1=3	u2,2=5			
Method M3		u3,1=5		u3,3=1	
...					
Method Mn	un,1=3		un,3=3		

Table 17.3. Matrix with the evaluation performed by partner institutions concerning the influence of practical teaching methods on improving the level of transversal competences analyzed in the project. Source: Own elaboration; u - evaluation performed by partner institutions concerning the influence of practical teaching methods on improving the level of transversal competences analyzed in the project.

Step 4. Collection of the evaluations performed by partner institutions in the summative matrix.
The PUT team, on consultation with the partner teams, developed summative tables. In order to consult data with the Partners, 2 methods of data aggregation were used in each of the variants described in step 3:

– 1. method of the sum of evaluations (Table 4),
– 2. method of the average of evaluations (Table 5).

As it has already been mentioned, individual evaluation by particular partner teams (P) in the number of 8 (P=8) and the indicators of usefulness of transversal competences (K) in the number of 4 (K=4) were taken into account.
In the method of the average of evaluations:

[15] http://atcerasmus.eu/

- in variant 1, where all the Partners evaluated all the practical teaching methods (M) in the number of 85 (M=85), the number of partners evaluating a method was n=8 ($0 \leq n \leq 8$), for each practical teaching method,
- in variant 2, where the Partners evaluated only those practical teaching methods which
- they used, use or know, n was variable and dependent on the number of Partners, who evaluated particular practical teaching method.

For reference: i means i-th practical teaching method from the set of methods M=85, and j means j-th transversal competence from the set of competences K=4, n means n-th Partner from the set of Partners P=8.

Step 5. Taking into account the indicator of usefulness of competences while evaluating the influence of using practical teaching methods on the development of transversal competences (tables 17.4 and 17.5).

Practical teaching methods	Transversal competences				
	Creativity (Cr)	Creativity (Cr)	Creativity (Cr)	Creativity (Cr)	Group of methods
Indicator of usefulness	w1	w2	w3	w4	
Method M1	$u_{[i,j]} = w_j \cdot \sum_{p=1}^{n} u_{[i,j]p}$				
Method M2					
Method M3					
...					
Method Mn					

Table 17.4. Summative matrix of partners' evaluation taking into account the indicator of usefuless of transversal competences – method of the sum of evaluation. Source: Own elaboration.

Practical teaching methods	Transversal competences				
	Creativity (Cr)	Creativity (Cr)	Creativity (Cr)	Creativity (Cr)	Group of methods
Indicator of usefulness	w1	w2	w3	w4	
Method M1	$u_{[i,j]} = w_j \cdot \sum_{p=1}^{n} u_{[i,j]p} : n$				
Method M2					
Method M3					
...					
Method Mn					

Table 17.5. Summative matrix of partners' evaluation including the indicator of usefulness of transversal competences – method of the average of evaluations. Source: Own elaboration.

Step 6. Consultations on the developed matrix with partner institutions
This step was taken during the implementation of tasks contained in steps 1-5.

Consultations were planned to be held 4 times:

- consultations 1 – verification and suggestions for complementing and changing the description of the way of evaluating the influence of practical teaching methods on transversal competences and the design of a matrix form – consultations of the present document and matrix form (prepared by PUT until 20 April 2016, consultations with the Partners, including their remarks and suggestions until 6 May 2016),
- consultations 2 – performing expert evaluation of the influence of practical teaching methods on an increase in the transversal competences level – filling in the matrix form (prepared by PUT until 15 May 2016, filled in by the Partners until 31 May 2016),
- consultations 3 – consultations on the results of the evaluation of influence which practical teaching methods exert on improving the level of transversal competences during a meeting in Finland – discussion (evaluation results prepared by PUT until 31 May 2016, remarks prepared and sent by the Partners until 15 June 2016),
- consultations 4 – taking part in the development of the final version of the matrix – distance consultations – (evaluation results prepared by PUT until 25 July 2016, remarks prepared and sent to PUT by the Partners until 25 August 2016).

Step 7. Specifying the importance of practical teaching methods in the aspect of their influence on improving the level of transversal competences.

The following was prepared:

- the hierarchy of the importance of transversal competences, the development of which covered expert evaluation and the indicators of usefulness of competences resulting from entrepreneurs / employers' evaluation,
- the hierarchy of the importance of practical teaching methods through the comparison of the sum of the products of the indicator of usefulness of transversal competences and the summative evaluation of the influence that practical teaching has on the improvement in the level of trans versal competences.

The example of the final form of matrix is presented in Table 17.6.

Practical teaching methods	Transversal competences				Group of methods	Influence of a practical teaching method on all the analyzed competences
	Entrepreneurship (E)	Creativity (Cr)	Communicativeness (Com)	Teamwork (T)		
Indicator of usefulness	w1	w2	w3	w4		
Method M2						$\sum_{j=1}^{4} u_{2,j}$
Method Mn						$\sum_{j=1}^{4} u_{n,j}$
Method M1						$\sum_{j=1}^{4} u_{1,j}$
...	...	...	...	...	s	...
Method M3						$\sum_{j=1}^{4} u_{3,j}$
Importance of transversal competences	$\sum_{i=1}^{n} u_{i,1}$	$\sum_{i=1}^{n} u_{i,2}$	$\sum_{i=1}^{n} u_{i,3}$	$\sum_{i=1}^{n} u_{i,4}$		$\sum_{i=1}^{n} u_{i,j}$

Table 17.6. Matrix with the set hierarchy of the importance of practical teaching methods, in which experts' evaluation was averaged (see step 5). Source: Own elaboration.

17.4. Research conclusions

Having presented the final four versions of the matrix in which the ranking of practical teaching methods was shown, conclusions and suggestions for further work were developed and the selection of the method of the final version of the matrix along with its selection variant was suggested. The selection of the method and version of experts' evaluation was made in order to create the final ranking of practical teaching methods which take into account dependencies of practical teaching methods and methods of teaching transversal competences. Below are listed the above-mentioned conclusions.

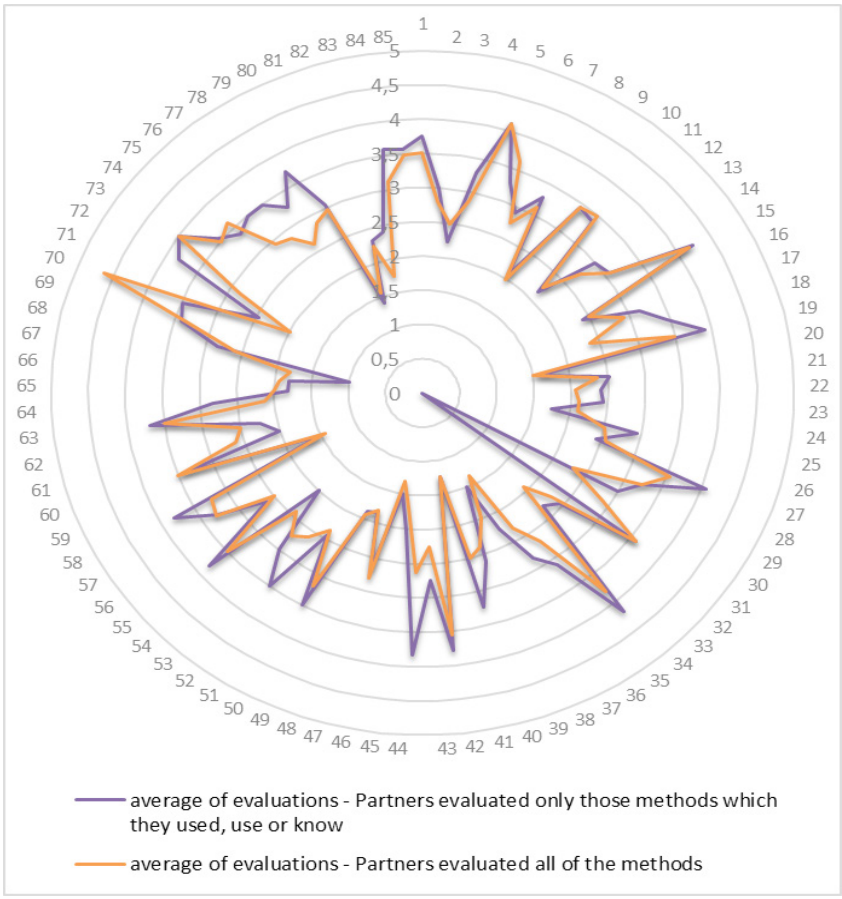

Fig.17.2. Differences in the evaluation of practical teaching methods by the method of the average of evaluations for each particular practical teaching method. Source: Own elaboration.

1. The method of the sum of evaluations may be rejected, because using it yields the same hierarchy as in the case of the average of evalutions (in both evaluation variants – see step 3 in which the variants are described).
2. When developing the hierarchy of the importance of practical teaching methods, it is recommended to use the method of the average of evaluations.
3. It is recommended to select a matrix in which the Partners evaluated only those methods which they used, use or know – this makes the results more credible. The comparison of the results of the evaluations of the matrix by the method of the average of evaluations in two

variants, i.e. in the variant where the experts evaluated all the methods and only those which they know or use is presented in fig. 17.2. The numbering of the methods follows the alphabetical order of all the practical teaching methods indicated in IO1 report of the Project, presented in appendix ... As one can see in fig. 17.2. the evaluations in both variants of the method of the average of evaluations were similar to each other. However, more credible are the evaluations of practical teaching methods made by experts who know specific methods and this matrix was chosen as the basis for further research.

4. Taking into account the recommendation from the above point, the average evaluation of a practical teaching method should be calculated in accordance with the procedure featured above (tables 5 and 6). The results of using this procedure are presented in table 7. Practical teaching methods are arranged according to evaluations, from the highest to the lowest.

5. In the next task of the Project IO5- The models of processes of developing transversal skills in practical training, the Partners should consult whether the created hierarchy of the importance of practical teaching methods should serve as a basis for the selection of methods to be tested (as part of the developed processes) or should it only play an auxiliary role. If it is to have an auxiliary function, the next task should consist in specifying a method of developing practical teaching processes (selection to test a set of practical teaching methods).

6. It can be clearly observed in the analyses performed that, irrespective of a method used to determine the importance of practical teaching methods and bearing in mind the indicators of usefulness of practical teaching methods, competences such as entrepreneurship and creativity are viewed as more important than competences such as communicativeness and teamwork. It is worth taking this fact into consideration when selecting practical teaching methods for testing.

7. Another task after developing a matrix will be to make use of it in order to select practical teaching methods and design practical teaching processes along with practical teaching methods which they contain. These processes will be tested in the project on the beginning of 2018. The tests will be used to compare which processes allow students to improve their transversal competences quicker. Activities carried out in this point will be precisely documented as part of further work in the project that will be finished till September 2018.

In relation to the above conclusions concerning further work in the project, the method of the average of evaluations was chosen, where the Partners evaluated only those methods which they used, use or know.

In the first quartile of the results of the final version of the matrix, to which no more than 25% of the accumulated value of the results by the method of the average of evaluations belong, 15 practical teaching methods were found. The most numerous group in the first quartile is represented by the group of other practical teaching methods (6 methods), the second group is made up by problem-solving methods (4 methods), next to follow are demonstration methods (3 methods), practical methods (3 methods) and activating methods (3 methods). The results of the final version of the matrix from the first quartile are presented in table 17.7.

No	Practical teaching method	Group of methods	Result	Cumulative
		1st quartile		
1	Cooperative methods	Other methods	4,24	4,24
2	Interships/practical training/ hands-on work experience, on the job learning/ working life experiences	Other methods	4,19	8,43
3	Brainstorming	Problem-solving methods	4,11	12,54
4	Exercises/trainings	Other methods	4,06	16,60
5	Start - up	Other methods	4,01	20,61
6	Educational simulation games	Demonstrating methods	3,90	24,51
7	Practical classes	Practical methods	3,83	28,34
8	Meta-plan	Problem-solving methods	3,83	32,17
9	Staging	Activating methods	3,82	35,99
10	Production classes	Practical methods	3,81	39,80
11	Management training	Problem-solving methods/Activating methods/Demonstrating methods/Practical methods	3,78	43,59
12	Activating thinking	Other methods	3,76	47,34
13	The power of connecting	Demonstrating methods	3,73	51,07
14	Science clubs, student organizations	Other methods	3,69	54,76
15	Group work/team work	Problem-solving methods/Activating methods	3,60	58,36

Table 17.7. Results of the matrix by the method of the average of evaluations in the variant of the Partners' evaluations of only those methods which they use or know for the first quartile of the accumulated value of evaluations. Source: Own elaboration

The complete results of the final version of the matrix are contained in the appendix "*Ranking of teaching methods of known/used transversal competence teaching methods by the method of the average of evaluations along with the indicator of usefulness of transversal competences among entrepreneurs for o ≤ NX (number of Partners' evaluations) ≤ 8*".

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SUMMARY

Marek GOLIŃSKI

A time of significant changes in the labour market is coming. We are facing the beginning of the fourth stage of the 'industrial revolution'. The concept of Industry 4.0, started in Germany in 2011, has spread onto other countries, and activities in the area of digitisation, automation and robotisation are the basis for building a competitive advantage of businesses.

We have become used to smart homes, we are starting to use the Internet of things, and now it is time to get used to smart workplaces. Directions of the economy's development are now flexible and adaptable to consumers' individual needs, they create smart chains of values. These changes are manifested in, among others, integration of hardware and network data, Big Data, automation of processes and services, swarm intelligence in networks. Such conditions for industrial transformation are directly connected to the changes in the labour market and subsequent changes in education. Overcoming technological barriers should be accompanied by economic and social changes, resulting from thorough changes in awareness and education. Further development of economy, connected with higher productivity, and as a result – higher standards of living, should be based on the improvement of the effects of the educational process. An integrated approach to managing institutions responsible for education on every level, considering the needs of the labour market while creating and realising syllabuses and improvement of new and useful competences, is a way of achieving these goals.

In order to realise the above-mentioned goals it will be useful to teach transversal competences with the use of practical education of students. This monograph, titled 'The acceleration of development of transversal competences', describes conditions for such a method of teaching based on the education system in Finland, Poland, Slovakia and Slovenia. It also presents assumptions for the use of this method. The authors of this monograph based their descriptions of the method of teaching transversal competences on their experiences resulting from scientific research in the area of management, human resources management, knowledge and quality management, and education. They aimed at creating solutions that would improve, on higher levels of education, the process of teaching transversal competences demanded in the labour market.

Although the authors of the monograph make in no chapter a direct reference to the term Industry 4.0, the entire course of research and modelling of the process is subjugated to economic acceleration. There is a close link between education and the economy as there is no other way of growth than through science and its practical application in life. The authors' research aims at addressing the task of supporting the economy through the improvement of the education system. This aim is effected through the acceleration of development of transversal competences.

Problems discussed in the monograph are related to the optimisation of the teaching process in view of using the effects of teaching in the professional practice of graduates. The phenomenon of maladjustment of competences is not only an inconvenience for the graduates and persons looking for employment. It is also a barrier for the development of numerous enterprises. Therefore, syllabuses should include not only current needs of employers, but also, based on reliable research and analysis, forecast the range of competences expected in the labour market in the future.

If a competitive economy is to be built based on knowledge and competences acquired, then processes of education should also be competitive. One of the ways of improving the process of practical education in acquiring transversal competences is to shorten the time of teaching the competence by optimising the teaching process. Optimisation of the process includes adjustment of teaching methods to the subject of teaching, as well as interrelating individual methods.

The monograph describes the stage of research which aims at creating methods of practical education in the area of transversal competences and making syllabuses flexible by adjusting them to the requirements of the labour market and involving employers in the process of creating syllabuses. Employers' participation in creating the requirements concerning the effects of students' education raises credibility of the need to study and motivates students to develop transversal competences continuously.

The study succeeded in relating the subjects and content of the particular chapters to the basic aim which is the improvement of the teaching process for the purpose of economic growth.

The result of the research is a new method of teaching, therefore it is aimed not only at groups with a direct influence on the teaching processes – schools, labour market institutions, but also students, who use the effects of education and have a direct impact on its improvement.

Another reason for writing this monograph was also the need to show institutions related to education and the labour market how important it is to improve the processes of raising competences in a direct connection with the development of the economy, and – what is more – for the development of the economy. The monograph also showed the necessity of increasing the integration of higher education institutions with the world of economy, as it is the main path to ensure flexibility and effectiveness of the processes of education.

Further research of the authors will be related to implementation of the designed method of education based on models created by academic and business experts from EU countries. The newly created method will also help popularise the necessity of accelerating the development of transversal competences on the level of higher education, but also of integrating the solutions with middle-level education and lifelong learning. Activities described in the monograph, and especially improvement of transversal competences are fully in line with preparing new business models of enterprises and building a competitive advantage on the market in the era of Industry 4.0.

The content of all chapters of the monograph, through a detailed and comprehensive description of the topic, while maintaining cohesion of the goals of activities, reflects the research concerning the creation of the method of accelerating transversal competences in the process of practical education of students. Due to the huge interest in the project even at an introductory stage of the research, all results of research will be published on the go. Independently of publishing results online, another monograph is planned, which will provide comprehensive results of the research and indicate directions for future research.

A FEW WORDS FROM THE AUTHORS

Zbigniew ANTCZAK
Wrocław University
of Economics, Faculty
of Management, Information
Systems and Finance

„Docendo discimus (discitur).
By teaching, we learn."

Jernej BELAK
University of Maribor,
Faculty of Economics
and Business

Prof. dr. Jernej Belak is an associate professor in corporate governance and strategic management. He is the author of several scientific book chapters and articles on corporate governance, strategic management, and business ethics as well as organizational culture as an important part of corporate governance and strategic management. *"It is of essential meaning for the (national) economies that countries design such higher education systems which would not only provide the information on certain competences but would highly stimulate the engagement of certain competences by the students in order to be able to contribute to companies' and economies' success as soon as possible."*

Kamila BORSEKOVÁ
Matej Bel University
in Banská Bystrica,
Faculty of Economics

Kamila Borseková is the Head of the Research and Innovation Centre at the Faculty of Economics of the Matej Bel University. Her research is focused on smart cities, creative cities, spatial and urban development, competitive advantage and competitiveness. She is currently working on several domestic and international scientific projects and grants. She is active in attendance, as well as organization of international scientific events, workshops and conferences. She is an author or co-author of more than 50 research papers, articles, chapters and studies. *"Development and acquirement of transversal competences during the study may be the crucial success factor for future career to many graduates."*

Mariusz BRANOWSKI
Poznan University of Technology, Faculty of Engineering Management

„Methods teaching transversal competences should be geared towards the improvement of practical skills – one should not teach the theory of entrepreneurship but rather develop student entrepreneurship. Hence, it is of paramount importance to select good teachers, encourage entrepreneurs' participation in the teaching process and choose adequate teaching methods."

Beata BUTRYN
Wrocław University of Economics, Faculty of Management, Information Systems and Finance

"Most important is to hold consultations with offices of career services in higher education institutions, employers should have a direct impact on the adjustment of education standards."

Iwona CHOMIAK-ORSA
Wrocław University of Economics, Faculty of Management, Information Systems and Finance

„Building relationships poses a challenge for contemporary mankind – all the more so as on the other side there is man – a big unknown."

Mojca DUH
University of Maribor, Faculty of Economics and Business

Prof. dr. Mojca Duh is full professor in strategic management; she is the author of several book chapters and articles on corporate governance, strategic management, and family business management. *"Higher education system in Slovenia is characterized by a three-cycle study structure taking into consideration the provisions of the Bologna Reform." "The application of the contemporary practical teaching methods can contribute considerably to improvement of the students' competences."*

Marek GOLIŃSKI
Poznan University
of Technology, Faculty of
Engineering Management

"If a competitive economy is to be built based on knowledge and competences acquired, then processes of education should also be competitive. One of the ways of improving the process of practical education in acquiring transversal competences is to shorten the time of teaching the competence by optimising the teaching process. Optimisation of the process includes adjustment of teaching methods to the subject of teaching, as well as interrelating individual methods."

Magdalena GRACZYK-KUCHARSKA
Poznan University
of Technology, Faculty of
Engineering Management

„Transversal competences are vital in the job market for present and future employees. This is borne out by, among others, the research results featured in this monograph. From the point of view of teaching, it is essential to make a proper selection of adequate teaching methods that may effectively influence the improvement of transversal competences of students and future professionals."

Eija HUOTARI
Centria University
of Applied Sciences

Eija Huotari, Ph D (econ) is working as a lecturer at Centria University of Applied Sciences and she is teaching entrepreneurship, communication skills, selling and marketing. "*The requirements from the Finnish Ministry of Education and Culture direct the Higher Education institution towards modern and more integrated teaching methods. Therefore, teaching of transversal skills have been implemented into curricula. The increase of the studyfication of work causes the popularization of the entrepreneurial attitude among students, hence more graduates start their own companies, too."*

Katarzyna JÄMSÄ
Centria University
of Applied Sciences

"Vast of transversal skills should be developed through international experience in order to meet the needs of today's global business world"

Waldemar JĘDRZEJCZK
Czestochowa University of Technology, Faculty of Management

Waldemar Jędrzejczyk, DSc, PhD, Eng., Professor at Czestochowa University of Technology, Head of the Division of Information and Knowledge Management in the Institute of Information Management Systems at the Faculty of Management of Czestochowa University of Technology. His research focuses on strategic management, information and knowledge management, human resource management, psychology, sociology and computing. *"The effectiveness of teaching is conditioned by a range of key factors which also include organizational conditions and the type of methods used"*

Leszek KIEŁTYKA
Czestochowa University of Technology, Faculty of Management

Prof. Leszek Kiełtyka, DSc, PhD, Eng., Director of the Institute of Information Management Systems at the Faculty of Management of Czestochowa University of Technology, Chairman of the Executive Board of the Scientific Society for Organization and Management in Warsaw. *"The aim of practical teaching is the transfer of practical knowledge, including good practices introduced in economic organizations."*

Robert KUCĘBA
Czestochowa University of Technology, Faculty of Management

Robert Kucęba, DSc, PhD, Eng., Professor at Częstochowa University of Technology, Deputy Director of the Institute of Information Management Systems at the Faculty of Management of Czestochowa University of Technology, Chairman of the Scientific Society for Organization and Management - local branch in Częstochowa. *"The heterogeneity of practical teaching methods enables students to assess the usefulness of acquired competences in professional life, in creating and moving about on the career path"*

Edyta KULEJ-DUDEK
Czestochowa University of Technology, Faculty of Management

Edyta Kulej-Dudek, PhD, Eng., scholar and expert in management in the field of organization and management. Her research interests revolve around innovation, entrepreneurship and corporate governance; information and IT management systems; knowledge management in business entities as well as learning and intelligent organizations. *"Initiatives that promote the development of transversal competences are particularly significant for the creation of modern teaching programmes, enhancement of skills, formation of education policy and stimulation of learning and teaching processes."*

Vanda MARÁKOVÁ
Matej Bel University,
Faculty of Economics

Vanda Maráková is assosiated professor and Vice-dean for International Relations of Faculty of Economics, Matej Bel University in Banská Bystrica. In her research, she focuses on destination management and marketing, destination image and corporate social responsibilhe deals also with efficiency of marketity. Sing communication tools. Up till now she has published several scientific monographs and papers in professional journals and conference proceedings. The author contribution to the monograph is focused on New teaching methods for practical training which are inevitable to apply not only within the author's organisation but generally in the higher education system. *"Practical training methods explore on critical analytical skills of students, synthesis and evaluation as they belong to the more sophisticated levels of students learning."*

Kazimierz PERECHUDA
Wrocław University
of Economics, Faculty of
Management, Information
Systems and Finance

"Learning processes are the most important factor in multinationals strategies, training and coaching agencies."

Dariusz PRZYBYŁEK
Western Chamber
of Industry and Commerce

"The demand for cross-cutting competences among entrepreneurs is recorded all over the world. The results of the study, included in monograph allow, the assessment of the level of demand for transversal among entrepreneurs in international view, including key determinants"

Hannu SIMI
Federation of Education in Jokilaaksot – JEDU

Hannu Simi works as a planner in The Federation of Education in Jokilaaksot. *"Entrepreneurship education is a life management, interaction, self-guided action, a capacity for innovation and an ability to encounter change."*

Małgorzata SOBIŃSKA
Wrocław University of Economics, Faculty of Management, Information Systems and Finance

"The use of teaching methods that are particularly valuable from the practical point of view should be a priority at all levels of education."

Hubert SPIŻ
Centria University of Applied Sciences

"In the light of the challenges waiting for fresh graduates on the modern labour market, it is particularly significant to strengthen their transversal skills what qualify them to adjust easier and quicker to these requirements. Pushing information into students' heads is not the way the Finnish education system wants to follow. The training should equip them in skills to be able to adapt to the professional life by utilizing creativity and proactive attitude developed while studying"

Małgorzata SPYCHAŁA
Poznan University of Technology, Faculty of Engineering Management

„Each of the project participants should understand the definitions of transversal competences in order to be able to design the methodology of their improvement. It forms a basis for the creation of specific competence indices and implies the results of the teaching process."

Mira SUIKKANEN
Centria University
of Applied Sciences

"The higher education in Finland integrates transversal competences early on empowering students in becoming skilled professionals in the demanding international platform. The higher education institutions apply research, development and innovation activities in the education seeking to respond to the labor market requirements"

Tjaša ŠTRUKELJ
University of Maribor,
Faculty of Economics
and Business

Assist. Prof. Dr. Tjaša Štrukelj deals with the enterprise governance and strategic management, which in the future she sees necessarily as a socially responsible. *"Practical knowledge can be taught on many ways, but desire on knowledge and self-engagement of students is still needed to adopt it", "In modern times in Slovenia the request of young people on knowledge is increasingly high – this is a part of their values."*

Maciej SZAFRAŃSKI
Poznan University
of Technology, Faculty of
Engineering Management

„The acceleration of an increase in transversal competences in the knowledge-based economy and alongside exponentially developing technology will facilitate the maintenance of highquality communication processes in corporate social systems and generally in the society."

Kamila SZWAJKOWSKA
Western Chamber
of Industry and Commerce

"The integration of entrepreneurs' needs and expectations regarding employees' transversal skills with the education system that is capable of meeting these requirements is a key factor that contributes to building strong human capital in enterprises. Employers seek employees who are not only highly qualified but also possess soft skills such as creativity, communicativeness, entrepreneurship and teamwork."

Anna VAŇOVÁ
Matej Bel University
in Banská Bystrica,
Faculty of Economics

Doc. Ing. Anna Vaňová, PhD, prodekanka pre rozvoj, vice-dean for development Ekonomická fakulta. *"In the Slovak Republic absents the conceptual approach to development of transversal skills in practice what influence also the using of transversal competences' teaching methods in higher education."*

Katarína VITÁLIŠOVÁ
Matej Bel University
in Banská Bystrica,
Faculty of Economics

Ing. Katarína Vitálišová, PhD. A Head of Department of Public Economics and Regional Development, Faculty of Economics, Matej Bel University in Banská Bystrica, Slovakia *"In the Slovak Republic absents the conceptual approach to development of transversal skills in practice what influence also the using of transversal competences' teaching methods in higher education."*

Ewa WIĘCEK-JANKA
Poznan University
of Technology, Faculty of
Engineering Management

„Conducting extensive research on the transversal competences practical teaching methods in four European countries allowed to observe the potential that the application of the said methods brings in everyday teaching activity in institutions of higher education. Joint studies brought in a selection of 85 methods assigned to 6 groups. A list of experimentally tested methods which significantly increase the competence level in a given area was then successfully drawn up."

Magdalena WYRWICKA
Poznan University
of Technology, Faculty
of Engineering Management

"Competences are the most important capital of person and organization"

Klaudyna BOGURSKA-MATYS
Poznan University of Technology, Faculty of Engineering Management

"Professional experience and professional practice, which naturally allows students use of academic knowledge, is extremely important. Students appreciate the opportunity to work in an enterprise to improve their skills and qualifications. They really want to know their future employers. Their needs and expectations."

Krzysztof JAKUBIAK
Poznan University of Technology, Faculty of Engineering Management

"The academy is a training ground for employers. The development of the level of an employee's competencies can start much earlier, even in a school, even in an academy. Cooperation between an enterprise and an academy may lead to changes in the academy curriculum so that they meet the requirements regarding competencies in given workstations."

Izabela LEWANDOWSKA
Poznan University of Technology, Faculty of Engineering Management

"Participation in such a project is the acceleration in your transversal competences' development. Results of the project will be a way to accelerate for students, teachers, employers and other entities."

Elżbieta JUCHNIEWICZ
Poznan University of Technology, Faculty of Engineering Management

"Changes in higher education, broadly understood education, should be adequate to the changes taking place in today's world. It's not just about keeping up with the changes. It is important also to know the needs of the economy in order to fine-tune the academic program to these changes."

THE ACCELERATION OF DEVELOPMENT OF TRANSVERSAL COMPETENCES

The monograph, made available to the Reader, contains, in the first place, a selection of theoretical issues related to the question of acquiring transversal competences by students. Secondly, it presents the results of the team's work which will be used to develop the final version of the ATC method. The authors came to the conclusion that the gathered material should be published despite the fact that work on the method will continue for a few years to come. The main motivation behind publishing the present monograph was to encourage cooperation between a wide scope of specialists, scholars, entrepreneurs and students in order to improve practical teaching processes in the range of transversal competences. Their fast development is not only indispensable in the knowledge-based economy, but also, or maybe for primary reasons, they form an essential pillar of social and civilization development.

Further research of the authors will be related to implementation of the designed method of education based on models created by academic and business experts from EU countries. The newly created method will also help popularise the necessity of accelerating the development of transversal competences on the level of higher education, but also of integrating the solutions with middle-level education and lifelong learning. Activities described in the monograph, and especially improvement of transversal competences are fully in line with preparing new business models of enterprises and building a competitive advantage on the market in the era of Industry 4.0.

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ACCELERATE
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