Entrepreneurs' Expectations and Students' Competencies According to the First Stage of the Synergy Project Evaluation

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The article presents the results of a research on students' competencies self-esteem. The research was conducted in the years 2009–2012, on a sample of 1,831 students, under the project called 'SYNERGY – MCSU Faculty of Economics students' competencies development by gaining practical knowledge.' co-financed by the European Union from the European Social Fund. The purpose of the research was to pinpoint the areas of competencies that are considered to be essential for business and determine the level of students' self-esteem in the identified areas. The main objective of the article is to show the competencies that are desirable from the business point of view, but are, in the opinion of the students, at a rather low level and require special attention and development. The paper presents the key findings of the study: the lowest self-esteem level was observed in the area of knowledge needed by the employers, the highest in the attitudes wanted by the labor market. Positive relationship was found between the level of competence self-esteem and the respondents' year of study.

Keywords: competencies; education; learning; knowledge management; labor market demands; self-esteem; students; Synergy project; Moodle

Characteristics of the Synergy Project

Introduction to the Project

Appropriate education of students is a prerequisite for an increase of their competencies, which are understood as a synthesis of knowledge, skills and attitudes (Čiarnienė, Kumpikaitė, & Vienažindienė, 2010, p. 438). Shaping the competencies leads to the increase of the competitive advantage gained in the labor market and can be an effective way of enhancing the employability level of the graduates (Jayawardena & Gregar, 2013, p. 89). Nowadays, in times of crisis, it has become undoubtedly clear that the labor market is a place with strong competition, employers' market (Aceleanu, 2013, p. 141). Developing competencies is also important from the busi-

ness point of view, since it helps the business to sustain and grow. To build the right competencies, it is essential to know the market needs (Sanghi, 2009, p. 14). Well prepared graduates become more efficient workers; better students' education reduces the costs of preparing new employees for work.

The project called 'SYNERGY – MCSU Faculty of Economics students' competences development by gaining practical knowledge,' realized by the Department of Economics Maria Curie-Sklodowska University (MCSU) is an attempt to meet the expectations of the employers, graduates and students, and also to improve the practicality of education. The project is implemented over the period of five years, from October 2009 to September 2014. It is co-financed by the European Union from the European Social Fund under the Operational Programme Human Capital. Detailed information about the Synergy project are available at www.synergia.umcs.lublin.pl.

The recipients of the project are both students and graduates of business studies, who can participate in a number of activities: lectures conducted by practitioners, trainings, practical projects, and internships.

In the area of evaluation, the project team conducted the activities to explore self-esteem of participants' competencies. This publication presents detailed results of the 1st stage of the research of the students' competencies self-esteem. In addition, the evaluation process is aimed to monitor the increase in the level of students' competencies and graduates' career, and identify the deficiencies in competencies desirable from the employers' point of view.

One of the initiatives of the project is The Entrepreneurs Council, a unit where representatives of the entrepreneurs gain the opportunity to exchange experiences and good practices between science and business. Furthermore, the Council influences the design of the study programmes. The Council consists of the representatives of the Faculty of Economics and the representatives of business and local government. It cooperates with the Department of Economics in the area of:

- research (implementation of advisory services, conferences, seminars, workshops, undertaking joint projects, practical use of research results),
- education (consulting training plans and curricula, organization of internships and students' practice, support in the development of teaching materials, organization lectures conducted by practitioners, organization of study visits),
- promotion (including promotion of the Department of Economics and partners, popularization of knowledge and education, popularization of good practices in the area of education and business cooperation).

The Project enabled the achievement of additional objectives resulting from close cooperation between the science and the business sector for example:

- development of a training programme in the area of using specialized IT tools in the enterprise management,
- arranging the Academy of Entrepreneurship,
- co-organization of an international conference Technology Innovation and Industrial Management 2012 (TIIM 2012),
- creation of *International Journal of Synergy and Research* (IJSR).

Main Aims

The main goal of the Synergy project is to minimize the competence gap of the students of the Faculty of Economics by increasing the level of practicality in education (Culkin & Mallick, 2011, p. 365). The achievement of the main target is possible due to the milestones, which include:

- increasing the level of mathematical knowledge by conducting additional courses,
- better preparation of graduates to enter the job market by providing specialist trainings,
- strengthening the practical elements of learning, thanks to cooperation with the representatives of business and business supporting institutions,
- establishing The Entrepreneurs Council, as a consultative body of the MCSU Faculty of Economics Programme Council,
- conducting selected classes by practitioners,
- providing practical skills by organizing internships for students,
- implementation of practical projects by students in enterprises and institutions,
- increasing the level of contacts between students and potential employers via workshops and panel meetings,
- implementation of an IT system for collecting the information about the level of graduates competence in order and adjust the curriculum to the needs of the job market,
- the use of IT tools in order to facilitate the cooperation between science and business representatives.

Main Offered Activities

The project activities are prepared for three target groups: students of the Faculty of Economics, entrepreneurs, and local authorities. The students of

the Faculty of Economics participating in the project have the opportunity to take part in:

- scientific conferences,
- compensatory courses in mathematics,
- trainings in starting and running a business,
- interpersonal trainings,
- trainings in the area of investing and stock markets,
- trainings in computer accounting,
- trainings in analytical tools (spreadsheets),
- internships in enterprises or institutions,
- practical projects carried out for companies or institutions,
- lectures, projects, and seminars conducted by business representatives.

Representatives of business and business-related organizations cooperating in the Project, gain the ability to:

- solve their problems through outsourcing consultancy projects to students,
- develop the graduates' competencies profile,
- recruit the best students and graduates,
- assess the potential employees during the internships.

These benefits, as well as the ability to use the knowledge of the wide academic community and an opportunity to increase the efficiency of the new employees' recruitment process, are can be achieved without additional financial costs. At present the organizers of the Synergy project cooperate with approximately two hundred institutions: small, medium, large companies and organizations.

IT Supporting Tools

Reaching the above goals was possible by using ICT tools such as a web page equipped with content management system (CMS) and The Virtual Platform of Cooperation (WPWWE) based on course management system MOODLE. Mentioned tools were also used to perform research on students' competencies self-esteem.

The Synergy Project Homepage

The homepage of the Synergy project is available at www.synergia.umcs .lublin.pl. It is based on open source blogging system WordPress, which can be also used as a powerful Content Management System (CMS). WordPress
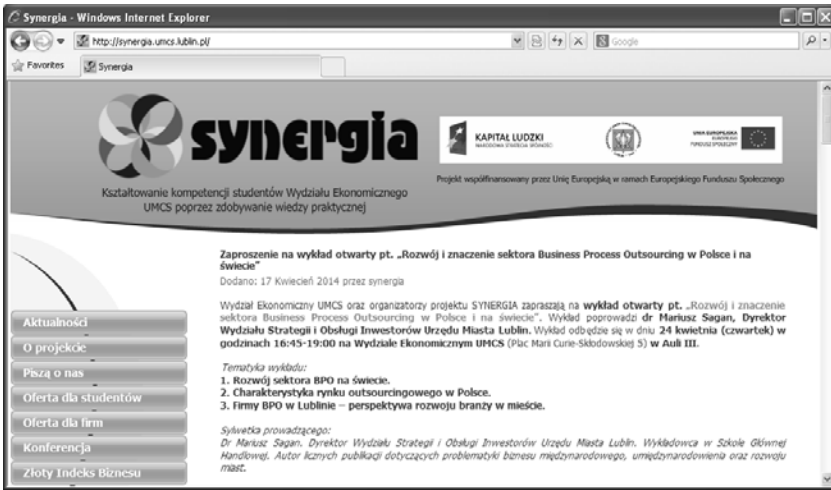
Figure 1   Main Page of the Synergy Project

is an easy and flexible tool that can be extended by thousands of themes, plugins, and widgets. The homepage of the Synergy project is displayed in Figure 1.

The web page is used to publish: news, information about the Project, offers for students and business organizations, useful hyperlinks, and project gallery. The page has been used for four years and it turned out that CMS system meets almost 100% of the project team needs. Thanks to WordPress flexibility, new requirements were easily implemented with the installation of plug-ins.

The main advantages of WordPress based web page discovered during the Synergy project realization are as follows:

- good documentation,
- scalability (a lot of useful plugins),
- short time of implementation,
- low cost of administration,
- great scope of graphic projects (themes), and
- ease of use and administration.

The Synergy web page is a very helpful tool in the area of project promotion and communication with partners and participants.

The Virtual Platform of Cooperation (WPWWE)

The SYNERGY project Virtual Platform of Cooperation is available at www. platforma.synergia.umcs.lublin.pl. The platform is based on MOODLE (Mod-

ular Object-Oriented Dynamic Learning Environment), a very popular, open source e-learning tool.

WPWWE is the main ICT tool supporting the realization of the Project. The platform serves as a communication portal between: the Department of Economics, the organizers of the Project, the Project participants and the business representatives. Using the WPWWE platform the participants are able to:

- apply to the project,
- apply to the specific project services,
- get access to the project databases: trainings, job offers,
- download supporting materials,
- search for employers,
- verify own knowledge and competences,
- quickly communicate with other participants and project staff,
- gather participants' opinion about the project services,
- assess the quality of project activities,
- provide the information about the acquired competencies, and
- indicate their needs that can be met during future Project activities.

Interface of the Virtual Platform of Cooperation is displayed in Figure 2.

The WPWWE is divided into four areas: download area, e-courses, electronic job fair, and project evaluation (management area). Using the download area, the participants can obtain all the documents required to join the project, download forms and templates, gain training supporting materials.

The e-courses area contains all the materials published by the trainers conducting the courses offered by the Project. Using the tests stored in this area, the teachers can also check the level of participants' knowledge at the begging and at the end of the course.

In the electronic job fair area, students can find job offers derived from the most popular job websites. The representatives of the business and project participants can also prepare or upload own announcements and information about offered and wanted jobs.

Using the evaluation area, the project staff can, for example: collect information about the participants, gain the participants' opinions, explore the students' preparation for the labor market needs, know the demands presented by the employers and the employees, collect information about the career of the graduates, monitor the progress of the project tasks and generate reports about delays and deviations from the plan.

In the area of students' competences self-esteem, the Virtual Platform was used to collect their opinion about possessed knowledge, skills and

Figure 2 Interface of the Virtual Platform of Cooperation

presented attitudes. Using the standard functionalities of MOODLE sys-
tems, in quite short time and with no extra costs, the organizers of the
project collected data from approximately 2000 students. Virtual Platform
tools can also generate simple reports presenting data analysis and sum-
mary that helps to plan future project activities.

Self-Assessment of Business Students' Competencies

Methodology of the Research

One of the 'SYNERGY – MCSU Faculty of Economics students' competences
development by gaining practical knowledge' project aim is to implement
the system for collecting the information about the level of students', grad-
uates' competencies in order to fit the needs of the employers and adapt
the curriculum to the needs of the job market. Before entering the project,
the students were asked to complete a questionnaire assessing the level
of their competencies, understood as a synthesis of knowledge, skills and
attitudes. The research was conducted in the years 2009–2012. The key
areas of knowledge, skills, and attitudes have been developed based on
the feedback from business representatives cooperating in the project and
on the analysis of the literature (Bencsik, 2010, pp. 13–14; Marzo-Navarro,

Pedraja-Iglesias, & Rivera-Torres, 2008, p. 286). The proposed areas were further verified by the experts in the field of human capital management, counselors and representatives of recruitment agencies.

In order to perform the research, the project team constructed a questionnaire consisting of three closed matrix questions (block of substantive questions) and respondent characteristic questions. Three substantive questions were related to the basic components of the competencies: knowledge, skills, and attitudes.

Closed-matrix questions enabled the assessment of the level of students' competencies on a scale of 1 to 5 (where: 1 – very low, 2 – low, 3 – average, 4 – high, 5 – very high). The measurement was performed using an electronic questionnaire, so that it was possible to reach a large number of respondents in a relatively short time and with no additional costs.

At the beginning, the respondent assessed the level of knowledge in the following areas identified by the key business representatives: production, marketing, sales, customer service, logistics, finance, accounting, taxation, banking, insurance, law, human resource management, project management, information technology, and business practices. Respondent assessed the individual areas by assigning ratings on a scale of 1 to 5, meaning the level of possessed knowledge.

In order to examine the level of skills possessed by the students, the researchers developed an exhaustive list (Bencsik, 2010, pp. 13–14; Vázquez-Bllrgete, Lanero, & Raisiene, 2012, p. 31). Its composition has been coordinated with the representatives of the business. This component consisted of the following skills:

- analytical thinking,
- communication,
- constructive criticism,
- coping with stress,
- creativity,
- decision-making,
- group work,
- knowledge of foreign languages,
- learning speed,
- making judgments and inferences,
- openness and adaptability,
- planning and work organization,
- preparing reports and presentations,
- public speaking,
- self-presentation,

- synthetic thinking,
- the use of knowledge in practice,
- using basic IT tools,
- using IT specialist tools, and
- using mathematical tools.

Attitudes recognized by the business representatives to be the most important from the labor market point of view belonged to the following areas: assertiveness, efficiency, entrepreneurship, ethics, honesty, independence, intuition, loyalty, orderliness, reliability, responsibility, self-improvement, and development.

The researchers didn't differentiate the significance of the above knowledge, skills, and attitudes areas. It was assumed that note 5 (very high) fully meets the requirements of the labor market. Maybe some differentiation is necessary and can be performed during the 2nd and 3rd stage of the research, and it is worth to ask the business representatives for some differentiation/gradation. The final level of possessed knowledge, skills, and presented attitudes was calculated as arithmetic mean (M) of th eparticular areas of the above components.

The respondents' characteristic questions were: field of study, level of study, year of study, gender, and place of residence.

Filling in the questionnaire through the use of an electronic version of the questionnaire, which was published on The Virtual Platform of Cooperation (WPWWE) took no more than 10 minutes.

The Research Sample Characteristics

The research involved 1,831 respondents, students of the Faculty of Economics, participating in the Synergy project. Detailed description of the research sample is presented in Table 1. Among the respondents, 33% were students of economics, 30% of management, 37% of finance and accounting. The vast majority of the respondents were bachelor's degree students (1540 respondents, 84%), while students of the master studies accounted for 16% of the respondents. Among the largest group of respondents were the students of the second and the first year of BA studies, respectively 64% and 17%.

The studies involved 1190 women (65%) and 641 men (35%). Among the respondents, 53% were residents of urban areas, while the remaining 47% of students came from rural areas.

Main Results of the Research and Conclusions

Having the right knowledge, skills, and attitudes can make it easier to find a job; furthermore, the salaries can be related to possessed competencies (Kelly, 2010, p. 650–657), more competent workers, especially in the

Table 1   Characteristics of the Research Sample

Respondent characteristics		Number of respondents	Percentage of respondents
Field of study	Economics	603	33
	Management	556	30
	Finance and Accounting	672	37
Undergraduate degree	I	1540	84
	II	291	16
Year of study	I	320	17
	II	1167	64
	III	53	3
	IV (1st year of masters)	126	7
	V (2nd year of masters)	165	9
Gender	Female	1190	65
	Male	641	35
Place of residence	City	976	53
	Village	855	47

Figure 3   Self-Assessment of Business Students' Competence

area of communication, can be more satisfied with the work (de Grip et al., 2009, p. 599–601). General self-esteem level of competencies had quite positive average rating (arithmetic mean) of 3.34 (see Kakkonen, 2011, p. 234). The study showed that among the three components: knowledge, skills, and attitudes that make up the competencies of students, the highest score received the component of attitudes ($M = 3.96$). Skills gained average rating of 3.42. The level of knowledge was assessed the lowest ($M = 2.64$). The results of the self-assessment of business students' competence are presented in Figure 3.

Significant is the fact that the realm of attitudes and the level of students' competencies received the highest average rating, while the level of possessed knowledge was rather low. This assessment seems to contradict the common opinion that sometimes universities provide students with a large amount of unnecessary knowledge, which is usually not reflected in the level of skills and does not lead to practical use of the acquired knowledge, or for shaping suitable attitudes of the graduates.

The results of self-esteem level of students' knowledge in selected areas are presented in Figure 4. The highest level of self-esteem refers to the areas of: computer science ($M = 3.05$), customer service ($M = 3.00$), finance ($M = 2.95$), and accounting ($M = 2.91$). The areas where the knowledge was
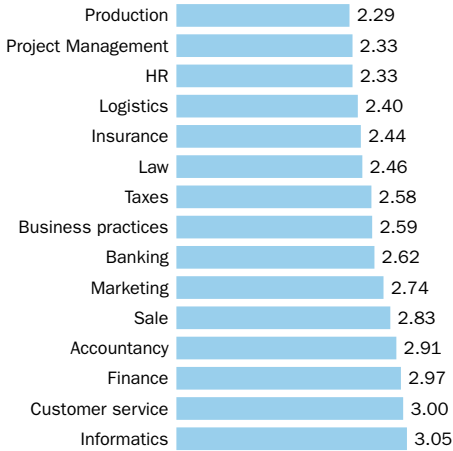
Production	2.29
Project Management	2.33
HR	2.33
Logistics	2.40
Insurance	2.44
Law	2.46
Taxes	2.58
Business practices	2.59
Banking	2.62
Marketing	2.74
Sale	2.83
Accountancy	2.91
Finance	2.97
Customer service	3.00
Informatics	3.05

Figure 4   Self-Assessment of the Level of Students' Knowledge in the Selected Areas

at the lowest level include: logistics, human resources management, project management, and production. In these areas, the average rating (arithmetic mean) on a scale of 1 to 5, was respectively 2.40, 2.33, 2.33, 2.29.

Based on the obtained results, it can be concluded that the students evaluate low the level of their knowledge resources. Low average rating of 2.64 may result from the relatively large representation of the students of initial years of studies (the first and the second year), who are starting to gain expertise, among the respondents. The representatives of undergraduate studies rated the possessed level of knowledge at 2.56, while the respondents representing the master studies assessed it at 3.04. Another reason for the low assessment of the level of knowledge may be the fact that the respondents were asked about their knowledge in specific areas. Perhaps having acquired the general knowledge during participation in the basic courses held during the first years of the studies, the students were not always able to classify it into a specific area.

The research of the students' skills self-esteem indicates that the students exhibit the highest level of practical application of knowledge in the areas of: using basic IT tools, communication, teamwork, openness to change and adaptability (compare with Bencsik, 2010, pp. 13–14). In these areas, the level of self-esteem was (arithmetic mean): 3.94, 3.87, 3.84, 3.80. The lowest marks received the following areas: self-presentation ($M = 3.31$), using mathematical tools and techniques ($M = 3.05$), public speaking ($M = 2.83$), using specialized tools ($M = 2.43$) (compare with Marzo-Navarro et al., 2008, p. 286). The results of self-assessment of students' skills in the selected areas are illustrated in Figure 5.

The above analysis shows that in order to make the maximum use of

Skill	Value
Using IT specialist tools	2.43
Public speaking	2.83
Using mathematical tools	3.05
Self-presentation	3.13
Coping with stress	3.21
Preparing reports and presentations	3.28
Knowledge of foreign languages	3.32
Synthetic thinking	3.34
Constructive criticism	3.45
The use of knowledge in practice	3.49
Decision-making	3.50
Analytical thinking	3.51
Learning speed	3.56
Making judgments and inferences	3.61
Planning and work organization	3.64
Creativity	3.68
Openness and adaptability	3.80
Group work	3.84
Communicating	3.87
Using basic IT tools	3.94

Figure 5   Self-Assessment of the Level of Students' Skills in Selected Areas

the skills possessed by the students, the teaching process, especially in the early years of studies, should enable the realization of group tasks, using simple IT tools, such as a web browser, instant messenger. Due to relatively high level of openness to change and adaptability presented by the respondents (Čiarnienė, et al., 2010, p. 441), it is worth to differentiate, diversify the process of gaining skills, for example, by using activating teaching methods such as brainstorming, task forces, project method or simulations (Buzzetto-More & Mitchell, 2009, p. 87).

The study programmes should also include courses to ensure the development of skills such as self-presentation, which plays a crucial role in the recruitment process, as well as to prepare the graduates, including future managers, analysts, and financial managers to conduct public speaking. The graduates of economics studies should have the ability to think logically and use mathematical tools in practice (Abraham & Karns, 2009, p. 355) in order to be able to base the conclusions or decisions on relevant numerical foundations, often generated in an automated way by IT tools. An important fact is also to enable the students to learn the commonly used advanced IT tools, such as: ERP systems, BI applications and applications that support electronic data interchange (EDI) in a new innovative ways (Barnatt, 2009, p. 55). The ability to use specialized IT tools can be one of the ways to adapt the students' competencies to the employers needs.

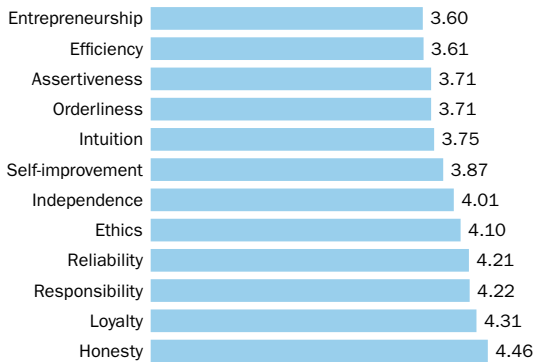The respondents presented a relatively positive opinion about the at-

Entrepreneurship	3.60
Efficiency	3.61
Assertiveness	3.71
Orderliness	3.71
Intuition	3.75
Self-improvement	3.87
Independence	4.01
Ethics	4.10
Reliability	4.21
Responsibility	4.22
Loyalty	4.31
Honesty	4.46

Figure 6   Self-Assessment of the Level of Students' Attitudes in Selected Areas

titudes required by the employers, in particular: honesty, loyalty, responsibility, and integrity (Roman, Maxim, & Manolică, 2013, p. 1639). Self-evaluation of the above areas was respectively at the level of (arithmetic mean) 4.46, 4.31, 4.22, and 4.21. The characteristics of self-assessment of students' attitudes in the selected areas are illustrated in Figure 6. In general, the area of presented attitudes has been assessed much higher than skills or knowledge. The attitudes considered to be the least developed were: regularity ($M = 3.71$), assertiveness ($M = 3.71$), efficiency ($M = 3.61$), entrepreneurship ($M = 3.60$).

The analysis of these data leads to the conclusion that the students of economics can be considered as honest, loyal, responsible, and reliable. At a slightly lower level, the students assessed the following characteristics: systematic, assertiveness, operability. Students also characterized themselves as having a low level of perception of the market needs, as well as the ability to grasp opportunities, and willingness to take the risk of running their own business. Consequently, it is important to systematically shape attitudes by introducing regularity, and rhythm to the way in which the content of the study programme is passed on to students. In the case of part-time students, it is crucial to design the mandatory training programmes and additional activities in a way that ensures an adequate distribution of content at a time, such as weekly classes, regular meetings with the supervisor, tutor, or a representative of the business.

The key issue is to develop an attitude of entrepreneurship and entrepreneurial culture (Kumara & Sahasranam, 2009, p. 24), for example by organizing meetings, seminars with entrepreneurs, presentations of case studies and implementation of practical projects that require contact with the business environment (Kirby & Humayun, 2013, p. 30–31). Entrepreneurship education can be also helpful in the area of promoting innovative and entrepreneurial attitudes (Culkin & Mallick, 2011, p. 364).

Table 2 Self-Assessment of Competencies among Business Students According to Students' Gender

Area	Female	Male	Total
Knowledge	2.60	2.71	2.64
Skills	3.41	3.44	3.42
Attitudes	4.04	3.83	3.96
Competencies	3.35	3.33	3.34

Table 3 Differences in Self-Assessment of Competencies among Business Students According to Students' Gender

Component	Total		Female		Male		t	p†
	M	SD	M	SD	M	SD		
Knowledge	2.64	0.68	2.60	0.67	2.71	0.70	–3.456	0.001
Skills	3.42	0.54	3.41	0.53	3.44	0.57	–1.098	0.272
Attitudes	3.96	0.55	4.04	0.51	3.83	0.58	7.905	0.001
Competencies	3.34	0.49	3.35	0.47	3.33	0.52	0.882	0.378

Notes M – arithmetical mean, SD – standard deviation, t – t-test value, p – significance level. † Two-tailed.

Incorporating the practical elements into the study programmes involves additional administrative issues: the selection of personnel, construction of meetings schedules, costs arising from the need to provide adequate salary for professionals, business people that would like to share their experience accumulated over many years. Although faced with many organizational costs or problems, it should be stated that the most important goals in the educational process must be the well-being of the student, which can be manifested through a formation of appropriate competencies that are commonly desired in the job market, are problem oriented, and defined with the help of the business representatives (Nirenberg, 2012, p. 23). Furthermore, it should be mentioned that guest lecturers provide a new and wider perspective; consequently, such activities are useful and appreciated by the students (Rajaratnam & Campbell, 2013, p. 719–720).

The study also made it possible to answer the question whether the level of presented knowledge, skills, and attitudes depends on gender, place of residence, year of study, or respondent's field of study?

The results show that both investigated women and men have similar levels of self-esteem of presented competencies (M female = 3.35 and M male = 3.33, see Table 2) (compare with Čiarnienė et al., 2010, p. 441; Kakkonen, 2011, p. 237).

The significant differences were observed in the area of knowledge (M female = 2.60; M male = 2.71) and in the area of attitudes (M female = 4.04; M male = 3.83). Men assessed higher the level of possessed

Table 4   Self-Assessment of Competence among Business Students According
          to Students' Year of Study

Component	I	II	III	IV	V	Total
Knowledge	2.12	2.66	2.91	2.94	3.12	2.64
Skills	3.25	3.40	3.68	3.62	3.67	3.42
Attitudes	3.94	3.90	4.19	4.20	4.20	3.96
Competencies	3.10	3.32	3.60	3.59	3.66	3.34

knowledge, but women stated to have higher level of presented attitudes (Table 3).

The results also indicate that the level of students' competencies is higher in the last years of studies (compare with Kakkonen, 2011, pp. 235–235). All components: knowledge, skills, and attitudes were rated lowest by the students of the first year, the arithmetic mean was, respectively, 2.12, 3.25, 3.94. The level of competencies achieved an average rating of 3.10. The highest level of competence was declared by the last year students, whose self-esteem is at a level of 3.66 (knowledge component $M = 3.12$, skills component $M = 3.67$, attitudes $M = 4.20$). Self-assessment of competence among business students according to students' year of study is shown in Table 4.

The average level of competencies among the students of the first and the second year of bachelor studies is significantly lower than among the students of masters studies ($F = 54,56$, $df = 4$, $p = 0,001$). The differences in self-assessment of competencies among business students according to the year of study are shown in Table 5.

The biggest difference can be observed in the area of knowledge ($F = 89,72$, $df = 4$, $p = 0,001$). The smallest difference, but still statistically significant, was observed in the area of attitudes ($F = 20,63$, $df = 4$, $p = 0,001$).

The inhabitants of urban areas have assessed higher the level of their competencies (M city = 3.39; M village = 3.28). The level of students' competencies according to the place of residence is shown in Table 7.

There were significant differences in the self-assessment of competence resulting from the place of residence of students. Statistically significant differences were observed among all three components of competencies: knowledge, skills, attitudes (Table 8).

The respondents from urban areas have assessed higher the level of all three components of competencies, than the residents of the rural areas.

Presentation of the level of students' competencies self-assessment according to the field of study is presented in Table 9. Self-esteem among the students of Management and Economics developed almost at the same level, gaining an average of 3.30. Presented slightly higher level of

Table 5 The Differences in Self-Assessment of Competencies Among Business Students According to the Year of Study

Component	Total		I		II		III		IV		V		F	df	p	Post hoc
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD				
Knowledge	2.64	0.68	2.12	0.70	2.66	0.63	2.91	0.52	2.94	0.54	3.12	0.50	89.72	4	0.001	1<2, 1<3, 1<4, 1<5; 2<3, 2<4, 2<5
Skills	3.42	0.54	3.25	0.56	3.40	0.53	3.68	0.45	3.62	0.48	3.67	0.52	26.09	4	0.001	1<2, 1<3, 1<4, 1<5; 2<3, 2<4, 2<5
Attitudes	3.96	0.55	3.94	0.58	3.90	0.54	4.20	0.39	4.20	0.45	4.20	0.47	20.63	4	0.001	1<3, 1<4, 1<5; 2<3, 2<4, 2<5
Competencies	3.34	0.49	3.10	0.48	3.32	0.47	3.60	0.36	3.59	0.42	3.66	0.43	54.56	4	0.001	1<2, 1<3, 1<4, 1<5; 2<3, 2<4, 2<5

Notes M – arithmetical mean, SD – standard deviation F – one-way analysis of variance Anova test value, df – degrees of freedom, p – significance level, post hoc – results of Tukey HSD test (e.g. 1 <2 means that average in group of students of the 1st year was lower than in group of students of 2nd year.

Table 6 Differences in Self-Assessment of Competencies among Business Students According to Field of Study

Component	Total		Economics		Management		F&A		F	df	p	Post hoc
	M	SD	M	SD	M	SD	M	SD				
Knowledge	2.64	0.68	2.58	0.71	2.61	0.66	2.71	0.67	6.56	2	0.001	1<3; 2<3
Skills	3.42	0.54	3.40	0.57	3.40	0.52	3.46	0.54	3.03	2	0.049	1<3
Attitudes	3.96	0.55	3.91	0.58	3.93	0.53	4.04	0.51	11.68	2	0.001	1<3; 2<3
Competencies	3.34	0.49	3.29	0.51	3.31	0.47	3.41	0.48	9.63	2	0.001	1<3; 2<3

Notes M – arithmetical mean, SD – standard deviation F – one-way analysis of variance Anova test value, df – degrees of freedom, p – significance level, post hoc – results of Tukey HSD test (e.g. 1 <3 means that average in group of students of Economics was lower than in group of students of Finance and Accounting.

Table 7 Self-Assessment of Competence among Business Students According to the Students' Place of Residence

Component	City	Village	Total
Knowledge	2.68	2.58	2.64
Skills	3.50	3.34	3.42
Attitudes	4.00	3.92	3.96
Competencies	3.39	3.28	3.34

Table 8 Differences in Self-Assessment of Competencies among Business Students According to Students' Place of Residence

Component	Total		City		Village		t	p†
	M	SD	M	SD	M	SD		
Knowledge	2,64	0,68	2,68	0,68	2,58	0,67	3,193	0,001
Skills	3,42	0,54	3,50	0,54	3,34	0,54	6,133	0,001
Attitudes	3,96	0,55	4,00	0,55	3,92	0,54	2,962	0,003
Competencies	3,34	0,49	3,39	0,49	3,28	0,48	4,862	0,001

Notes M – arithmetical mean, SD – standard deviation, t – t-test value, p – significance level. † Two-tailed.

Table 9 Self-Assessment of Competence among Business Students According to the Students' Field of Study

Component	Economics	Management	Finance and Accounting	Total
Knowledge	2.58	2.61	2.71	2.64
Skills	3.40	3.40	3.46	3.42
Attitudes	3.91	3.93	4.04	3.96
Competencies	3.29	3.31	3.41	3.34

competence has been assessed by the Finance and Accounting students ($M = 3.41$).

The study also showed that there were significant differences in the self-esteem level of students' competencies according to the field of study (Table 5, see p. 116).

The average level of knowledge and attitudes among the students of Finance and accounting is higher than among the students of Economics and Management ($F = 6,56$, $df = 2$, $p = 0,001$). In the area of skills, we can also observe one significant difference. Namely, in the group of students of Economics the average level of skills is lower than in the group of Finance and Accounting students ($F = 3,03$, $df = 2$, $p = 0,049$).

Some differences between the level of self-esteem of the students of Economics and Management, and the representatives of the Finance and Accounting may result from the recruitment process. For several years, the Department of Economics MCSU observed that in the selection procedure

there are two or three times more candidates for one place for Finance and Accounting than for the other economic fields of study. Therefore, the selection is stricter. As a result, Finance and Accounting gets the candidates who obtained better secondary school results, so they should have a higher level of competencies.

Further Research

After the entrance evaluation, the project organizers plan to perform three additional stages of research about students' competencies: output evaluation, employer's opinion, career evaluation. All stages of the research are presented in Figure 7.

The first stage of the Synergy project evaluation enabled the identification of the areas of knowledge, skills, and attitudes that are desirable from the business point of view. Gathered data showed that there are some deficiencies in students' competencies according to the market needs. Due to the student's profile analysis, some changes in the study programmes were prepared, and extra activities for students were offered. During the Synergy project, the students improved their competencies by participating in the above activities, and either realizing projects for companies or attending internships.

The second stage of the research will be to explore the students' competencies after finishing the participation in the Synergy project. Up to now, approximately 2000 students attended the Project. The data presenting the increase of their competencies are being collected and analyzed. At the second stage of the research, students fill in the same questionnaire like in the first stage, but after taking part in extra activities, and after finishing the project. The analysis and the conclusions resulting from the second stage of the research will be published at the end of the year 2014.

The third stage of the research will be to evaluate what is the level of graduates' adjustment to the employers needs. During this stage, the employers, that employ Faculty of Economics graduates, will be asked to fill in an electronic questionnaire concerning:

- specialist knowledge of employed graduate (presented level and desired level),
- skills of employed graduate (presented level and desired level),
- attitudes of employed graduate (presented level and desired level).

Employers will also be asked to recommend some activities such as: closer cooperation between education and business, more practical preparation, conducting study programmes in foreign languages, practical trainings in enterprises for the lecturer. Gathered data will help to improve the potential of the Faculty of Economics and its graduates.
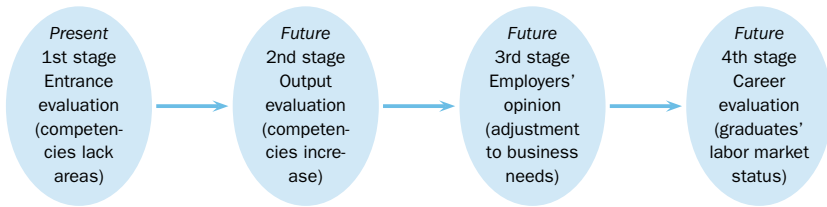
Figure 7 Stages of the Research on Students' and Graduates Competencies

The final stage of the research will be to know the graduates' labor market status, namely whether a graduate has the employment, carries on own business or is unemployed. During this stage, the collected data will also show what kind of knowledge, skills, and attitudes helped the students in their career.

Summary

Conducted research indicates that students assess their present level of competence (on a scale from 1 to 5) on an average of 3.34. Among the competencies defined as the collection of: knowledge, skills, and attitudes, the lowest score was obtained by the component of knowledge, mainly in the areas of logistics, HR management, project conducting, and production. Slightly higher scores obtained the areas related to information technology, quality of customer service, and knowledge of finance and accounting fundamentals and standards. It seems very important to prepare good courses, and teach the students about the logistics processes and the use of new technology in logistics; human capital management including: the recruitment process, building career development paths, and methods of motivation. It is also essential to present knowledge related to project management for example: PM methodology, IT tools supporting the management process, and PM success factors and risks. Above-mentioned activities, implemented in the area of knowledge, may be a way to remove or reduce the competence gap between the employers' requirements that are confirmed by the job offers and the business students or graduates competencies, confirmed by the Bachelor or Master diploma.

In the opinion of students, their level of skills is relatively high (3.42 on a scale 1 to 5), higher than the level of knowledge, where the average rating was 2.64. In most cases, the areas with the greatest shortages are: self-presentation, the use of mathematical tools and techniques, public speaking, and the use of specialized IT tools. In turn, the areas of using the basic IT tools, communication, teamwork, openness to change and adaptability received the highest scores. Therefore, it is important to develop the practical skills through the implementation of project tasks, discussions of

case studies, and allowing students to use their full potential including: openness, teamwork and communication skills. In the process of developing their skills, the students should use more IT tools and attempt to establish cooperative relationships with the representatives of business or government. (Holtzman & Kraft, 2010, p. 56). Advanced analytical tasks require good knowledge of mathematical foundations and proficient usage of popular, standard IT tools for example spreadsheets that help to collect, validate, analyze, and easily apply sophisticated analyses to large data sets (McClure & Sircar, 2008, p. 374).

Mentioned activities should use the students potential exhibited in a relatively high level of computer knowledge and enable to increase and develop knowledge in the areas of human resource management, production, skills, which were assessed relatively low.

In the area of competences components, the highest note was given to attitudes. That component gained an average rating of 3.96. Top rated attitudes include: honesty, loyalty, responsibility, and reliability. According to the students' opinion, young graduates are loyal to their employers and clients, and can take full responsibility for their actions. Relatively low self-esteem level was observed in the following areas: regularity, assertiveness, efficiency, and entrepreneurship. Therefore, the design process of educational paths should focus on the development of knowledge, skills, and attitudes such as regularity and willingness to start own businesses not only for students of business but also of non-business subjects (Kuckertz, 2013, p. 69).

Young people without experiences can be more susceptible to the influence of senior workers, firm clients or formal and informal opinions; therefore, in the initial phase of work, they should be supported by highly experienced workers with high seniority. The efficiency of new worker, especially inexperienced graduates, is rather low but employers can use their creativity and develop willingness to quickly adapt to the workplace (Roman et al., 2013, p. 1639–1640).

While the development of knowledge and skills in selected areas can be seen in the short term, at the level of a course, the shaping of attitudes requires long-term plans, which should consist of a coherent set of activities: lectures, tutorials, laboratories, projects, seminars, internships, study visits spanning the entire studies programme. In order to minimize the gap between the businesses requirements and the offer of the universities, it is necessary to exchange knowledge and experiences, as well as staff between science and business (Bencsik, 2010, p. 17; Abraham & Karns, 2009, p. 355). Shaping the attitudes should be coherent during the study period and work time. Therefore, the same attitudes that were formed during the education period should be strengthened by the employers in or-

der to have a worker with a strong backbone. The university should help their students to develop those competencies that best foster employability (Teijeiro, Rungo, & Freire, 2013, p. 286–295; Jackson, 2010, p. 30).

The research also showed that there were no significant differences between the level of competence self-esteem among male and female students. The only significant differences were observed in the area of knowledge and attitudes. The attitude component was rated higher by women, while men stated to have a higher level of possessed knowledge. There were also some differences in the self-assessment of students' competence level according to the respondents' place of residence or field of study. The inhabitants of urban areas assessed higher the level of all three components of competencies, than residents of the rural areas. Finance and Accounting students stated to have a slightly higher level of competencies, which is probably due to the higher level of competition during the recruitment stage.

There is also a positive connection between the level of competence self-esteem and the respondents' year of study. The competencies were rated quite low by the first year students. The highest level of competence was declared by the last year master's degree students. These data clearly show that during each year of study, students acquire new knowledge, skills, and form attitudes, which make up an increase in the level of substantial competencies that are useful and desired by the future employers.

Performed analyzes show that we need to improve the students' competencies especially in the areas of knowledge and skills. Therefore, it is necessary to strengthen the cooperation between education (science) and business in order to prepare an analysis of the labor market requirements and implement the collected needs in the study programmes. Mentioned activities should transform the students into graduates sought by the employers.

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