

UNIVERSITY-ENTERPRISE PARTNER SHIP IN TRAINING ENTREPRENEURSHIP*

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The wealth of a nation is produced by the economical behavior of its citizens. This is the reason why in many countries around the world a special emphasis is placed on entrepreneurial education. At country level, in a particular social, economic and historic context, the synergic sum of individual behaviors makes the difference between richness and poverty.

The effects of entrepreneurship at company level consist of innovation, strategic renewal, creation of value and wealth. At society level entrepreneurship means job creation, technological progress, and shaping of the global cultures (Ireland & Webb, 2007).

At the level of individual behavior, theorists distinguish between entrepreneurship and self-employment. Entrepreneurship creates opportunities for emerging businesses, new jobs, added value and economic growth while self employment is rather a life-style, focused on autonomy in sustaining a professional activity.

Governments and different organizations involved in education and in employment emphasize the necessity of the development of entrepreneurial competences, viewed as a way of empowering the behavior of the individuals in the prospect of creating new productive activities within the society.

Research on Entrepreneurship

Even if the field of entrepreneurship research is an emerging one, the literature is very rich, diverse, and fast growing, dealing with topics such as: employee entrepreneurship (Franco, 2005), academics' entrepreneurship (Andretsch & Kaylar-Erdem, 2005), entrepreneur-student collaboration (Heimonen, Handelberg, & Narits, 2009), increasing the awareness on entrepreneurial traits (Venesaar et al. 2008), and development of disciplinary scholarship on entrepreneurship (Zahra, 2005). Apart from research on discipline based topics, the research in entrepreneurship is rather cross disciplinary, with a tendency to establish a field of its own starting with the last decade of the twentieth century.

In the introduction to their research synthesis, Acs & Andretsch (2003) state that: "Entrepreneurship has come to be perceived as an engine of economic and social development throughout the world" (p. 3). Comprehensive reviews on the research in this field are given by Alvarez, Agarwal & Sorensen (2005). A new entrepreneurship paradigm is being proposed and new qualitative methods (Neergaard & Ulhøi, 2007), such as the ethnographic method, the building of a grounded theory, the techniques used for sampling and collecting data, etc.

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A more recent meta-analysis of the research in the field is given by Bouckennooghe, De Clercq, Willem, & Buelens (2007). They attempted to assess the validity of entrepreneurship research by “analyzing relevant articles that were published in the top-rated academic management and entrepreneurship journals from 1999 to 2003” (p. 167). The meta-analysis of the research is a necessary step in order to create confidence in the appropriateness and rigor of research methods used by such an eclectic field and in order to create confidence and credibility. The research on all the above mentioned topics intends to explain real life phenomena in entrepreneurship and to provide solutions to practical problems and to educational politics.

Entrepreneurship and Education

Regardless of the fact that the entrepreneurial personality is considered as born (Fisher & Koch, 2008), or made (Chell, 2008), it is obvious that it can be improved by education and by impetus from the society. Entrepreneurship deals not only with someone's own business, but also with innovation in any workplace:

Entrepreneurship is the force that created the strongest economy in the world and needs champions now. The skills connected to making the “right decisions” for entrepreneurial success can and should be experienced and learned throughout education. It must also be recognized that entrepreneurial skills can be used in any workplace, not just when operating one’s own business. (CEE, 2009)

Entrepreneurship education empowers everyone with the capacity to approach his or her own job in an innovative way, to start a new business or to open an individual business when they become unemployed. The educational system can and must reconsider entrepreneurial education at all levels in order to develop useful skills and competences, thus contributing to the economic development of a country.

Competence models for all the levels of entrepreneurship have been developed during the last years, such as the competence model used by the United States Department of Labor (DOL/ETA, 2004), which contains a special area dedicated to entrepreneurship in section 9—management competences. This model is used in designing education programs and syllabi by the Consortium for Entrepreneurship Education (CEE, 2009).

The Oslo Conference on “Entrepreneurship Education in Europe: Fostering Entrepreneurial Mindsets through Education and Learning” lead to the establishment of the “Oslo Agenda for Entrepreneurship Education” which promotes entrepreneurial mindsets in society by means of education and other specific actions. The participant stakeholders stated their willingness to support educational establishments, teachers, and educators to develop entrepreneurship activities in schools and in higher education (EEE, 2006a, EEE, 2006b).

A presidential address of the European Commission’s Directorate General for Enterprise and Industry that was delivered at the 11th annual conference of the European Charter for Small Enterprises, 3-5 June 2008, emphasized the idea that the “entrepreneurship mindset” and the entrepreneurship education “could be improved in the wider bid to create a more competitive Europe.” The change of the mentality at society level in this respect must shift from pilot projects to more general solutions by systematic development of entrepreneurship education at all levels, consisting mainly in curricula adjustment and in topic trained teachers (ETF, 2008).

Entrepreneurship and Higher Education

Regarding this third dimension, a new role is emerging in the contemporary society – the entrepreneurial role, which means directly contributing to the economic development of the society. Several researches address entrepreneurship in the university, such as scientists' entrepreneurship and their role in starting spin-outs based on research results (Andretsch & Kaylar-Erdem, 2005).

At the same time we assist in the development of syllabi and even of study programs that aim the development of entrepreneurial competences. Higher education cannot ignore this topic anymore because teaching entrepreneurship in university means enabling graduates with the capability of becoming innovators. The teaching and learning of entrepreneurship in higher education needs a new educational paradigm Fayolle (2007), shifting from disciplines limited to business programs to a wider approach, allowing every student, regardless of his or her specialization, to acquire entrepreneurial competences.

The TUNING Researches on Competences Extended to Entrepreneurship

The initial TUNING research developed by a project coordinated by Gonzales & Wagenaar developed a generic competence profile for higher education degrees – first (bachelor) and second (master) cycle. Apart from this, in 2003 seven subject-specific competence profiles were made for Business Administration, Chemistry, Earth Sciences, Educational Sciences, History, Mathematics, and Physics. This initial stage was followed by Phase 2, which developed another two subject-specific competence profile: European Studies and Nursing (Gonzales, Wagenaar, 2005).

The former EUI-Net project (2005) developed a research on competences required by working in industrial settings, aiming to identify the main generic and specific competences (Luca, 2007a), as well as the practical skills (Luca, 2007b) required by industrial activities. The results of this cross-disciplinary research offered policy makers in higher education from partner countries a comprehensive view on the competence profile in this field, which enabled them to suggest curricular adjustments to study programs.

The entrepreneurial competences were included neither in the original TUNING researches, nor in the above mentioned EUI-Net researches. The present EUE-Net contribution to the study of entrepreneurship development in higher education consists in investigating the way the main stakeholders—academics, employers, students and graduates—view the training of entrepreneurial competences. The practical placement was chosen because of the fact that it is the main ground for collaboration between the university and the enterprise for “adjusting” the theoretical training to the requirements of the practice, and for learning “hands-on” entrepreneurial competences.

Entrepreneurial Competences in the Context of Learning

Learning is a continuous process which takes place in various environments and helps people fulfill the activities they are required to. Knowledge is not only theoretical, but also practical, and one of the most suitable contexts for getting the best of both types of knowledge is during the practical placement period at university. Hager (2004, cited by Tynjälä, 2008) considers learning as performing an action in the world.

Learning is contextual, and learning at the workplace combines very effectively the theoretical paradigms which are in “student’s head” with the applied form that takes place during the work process. Capabilities, term used by Kember (2009) for competences, develop if the curriculum demands that students practice them.

Since the economical world has adopted the globalization trend and since it deals with the requirements to open towards new markets, the need for employees who are able to adapt globally is of the utmost importance. Universities must prepare graduates who cover that need, meaning that they need to open towards new and diverse learning environments. Scientific literature also made progress in understanding the benefits of real work experience during university studies. Eraut (2004, as cited in Tynjälä, 2008) presented a typology that includes learning outcomes at the workplace.

1. THE METHODOLOGY OF THE RESEARCH

The research presented in this book is a continuation and a development of the first Tuning-type research which took place under the supervision of the European University-Industry Network (EUI-NET) project. The research aimed to define and update the practical competences that are relevant for the industrial sector (Luca, 2007a; Luca, 2007b). Therefore, the present research uses a methodology and respondent groups similar with the previous research, and a descriptive-exploratory approach.

In their benchmark research on the competences relevant for different fields of higher education, Gonzales & Wagenaar (2003) coordinated a team of specialists all around Europe who investigated the list of generic and specific competences in the following areas: business, chemistry, education sciences, geology, history, mathematics and physics. Later, the same authors (Gonzales & Wagenaar, 2005) extended the research to three other fields: European studies, nursing, and business administration.

The methodology used by Gonzales and Wagenaar was the guideline for our research in the previous project, and the approach was cross disciplinary. The aim of our research which was conducted in 2007 was to identify the relevant competences for working in enterprises, regardless of the field of activity. *According to previous literature (Gonzales & Wagenaar, 2003, 2005)* we made an interrogation regarding the level of importance and the actual level of achievement of the competences, and we targeted three groups of stakeholders: academics, employers, and graduates. Thus, our research was able to identify the educational and training needs which are important for working in the industrial sector.

As the scope of the network supporting our research extended, we aimed to identify the way entrepreneurial competences are perceived by the three groups of respondents. Entrepreneurial competences became important due to the development of the service sector and to the changes in the structure of employers on the labour market. Each year, more and more small and medium-sized companies hire graduates from all the fields of higher education.

Entrepreneurship is viewed nowadays not as a rare attribute of the historical founders of big businesses, but as a set of competences which can be taught and learned by anyone, at all levels of education. For the university it becomes more and more

evident that aiming to improve the entrepreneurial education is a way of increasing the employability and the economic initiative of the graduates.

Practical placement is the way students come into contact for the first time with the economic sector. Practical placement is a part of the university curriculum which is meant to give students a hands-on learning experience concerning the reality of an enterprise or organization. Enterprises and companies are thus involved in the accomplishment of the educational objectives of the university, being at the same time interested in contributing, as potential employers, to the success of higher education on the job market.

But is this learning experience a profitable one from the point of view of entrepreneurship? Or is it rather a way of increasing the employability? Do the students acquire the competences needed for innovation in economy?

Our present research aims to identify the importance attributed to a list of entrepreneurial competences by the three groups of respondents mentioned above, and to assess the discrepancies between the level of importance of each competence and the level of achievement via practical placement. Besides the quantitative approach of the first part, based on the statistical treatment of the scaled answers, the qualitative approach of the second part aims to describe and interpret the answers to the open questions.

Participants and Procedure

The participants in this research belong to three categories which are important in the context of the students' education, as they represent suitable future employees or free agents on the economic market. They are members of the academic staff from universities in 18 European countries, employers from sixteen different countries and students and graduates from 20 countries. The respondents were not selected according to a specific criterion, but they are the ones who were considered important by the project partners from each country, and, besides that, their availability and courtesy to answer the questionnaire made them the subjects of our research.

The respondents were contacted by the members of the project team from each country and asked to fill out a questionnaire, either online at a specified link, or in a ".doc" file format. The questionnaires filled out in the last format were then sent by e-mail to the research team. The dropout rate is not known because those who refused to answer were not counted by the operators. From a total of 197 questionnaires received by e-mail or filled out on-line we retained as valid and complete 182 questionnaires.

The group of subjects is not very balanced because of the smaller number of employers who participated in the study. This may constitute a weakness of the research; still, the number is over thirty, usually the minimum recommended by experts in statistics when using group comparison.

Design and Instruments

The questionnaires were filled in either on-line, either in Word format sent by e-mail to the research team. The on-line questionnaires which were not fully filled out were not saved by the server. For both formats the questionnaires with open questions left blank were however considered for the statistics.

Content and Structure of the Questionnaires

The questionnaire addresses the entrepreneurial competences which are trained via practical placement. The list of entrepreneurial competences was established by the research team after consulting the literature in the field. From an initial list of 20 competences, 14 were retained for their relevance to a successful entrepreneur. The participants were asked to rate on two separate 4-point scales the level of importance of these entrepreneurial competences and the extent to which they are developed by the practical placement. Two blank lines were added at the end of the list (items 15 and 16) in order to allow the respondents to fill out other competences which they considered as important.

Besides the 14 scaled competences, seven open questions were asked at the end of the questionnaire. Items 17, 18, and 19 contained questions with yes/no answers and the possibility to give more details in case of a “yes” answer. The last four items (20, 21, 22, and 23) were completely open questions, followed by demographic information at the end. All the answers were confidential and were used only for the purpose stipulated in this research (see Appendices 1.1, 1.2. and 1.3 for the content of the questionnaires).

Metric Qualities of the Scales

We calculated the Cronbach’s α coefficients for the ratings collected for the first 14 competences on the two scales mentioned above: the first scale measuring the level of importance and the second scale measuring the level of achievement of the competences, that is, the extent to which they are developed by the practical placement. All the coefficients had good and excellent values, independent of the methods we calculated them with (see Table 1).

Table 1. Reliability coefficients for the questionnaire

Criterion	Level of importance	Level of achievement
Cronbach alpha	.88	.90
Split-half alpha	Part 1 – 7 items	.82
	Part 2 – 7 items	.83
Correlation between the first and the second half	.76	.79
Spearman-Brown coefficient – equal length	.86	.88
Guttman split-half coefficient	.86	.88

The scale that comprised answers regarding the importance of entrepreneurial competences during the practical placement showed high internal consistency, with a Cronbach’s α of 0.88, and for the split half methods it showed a Cronbach’s α of 0.80 for the first part and a Cronbach’s α of 0.78 for the second part (see Appendix 2.1. for

further details). The Guttman split-half coefficient is high – 0.86, and the Spearman-Brown correlation value is also 0.86.

The second scale, which measures the level of achievement of the competences as the respondents perceive it, reflected even higher values. The calculated value of the Cronbach's α coefficient is 0.90 for the 14 items, 0.82 for the first seven items and 0.83 for the last seven items. The correlation between the two parts of the scale is 0.88 and the Guttman split-half coefficient has a value of 0.88.

We performed a factor analysis on the data in order to identify the overlapping (i.e., the extent of shared variance) of the items included in each of the two scales: the level of importance and the level of achievement. Two factors resulted for the first scale – the level of importance of the entrepreneurial competences – that cover 40.08 % and respectively 8.67% of the total variance. The first factor refers to the abilities that are necessary in daily activities. The second factor encompasses more general abilities related to innovation and business development.

The scale that evaluates the opinion of the subjects on the level of achievement of the competences is more homogeneous, and it consists of a single factor that explains 44.75% of the total variance.

The metric analysis of the scales indicated that we can have confidence in the data collected with this tool, and that the results can be interpreted.

We analyzed the open answers according to the following criteria:

- Hosting companies and enterprises as learning environments for entrepreneurship - question 17, 18, and 19.
- Developing entrepreneurial competences through practical placement - question 20.
- Changes needed in the policies and curricula of the universities in order to improve entrepreneurial training – question 21 and 22.
- The role played by the companies in the development of the entrepreneurial competences of students – question 23.

2. RESULTS

The Importance of Entrepreneurial Competences

Three groups of respondents were identified: academics, employers, and students or graduates, whose perspectives on competences are analyzed and compared below.

The subjects were asked to rate on a 4-point scale the importance and the level of achievement of 14 entrepreneurial competences as they result from the practical placement stages of the students. The analysis of the ratings for the level of importance given by the respondents in all three groups, lead to a hierarchy of the competences.

The results of the ranking procedure showed that all the 14 competences are perceived as being important since all of them received a mean value above 3 points, when 4 points is the maximum value. Another observation is that the mean values of the choices made by the subjects are close to each other, and the difference between the

competence ranked as the most important and the one ranked as the least important is less than the standard deviation of any of the items.

The most important entrepreneurial competence identified by the respondents is the “Capacity to understand customers’ needs,” with a mean value of 3.48 points, followed by the “Capacity to establish productive relationships,” with a mean value of 3.45 points, and by two other competences with the same mean value, 3.36 – the “Capacity to make decisions under conditions of uncertainty” and the “Ability to gain social capital (professional networking).” Looking at the content of the competences we noticed that they refer mostly to professional social skills that help to increase the profitability of work not only in an economic sense, but also in a personal manner, by increasing the individual’s satisfaction with the job. On the third position in the hierarchy is placed the decision making ability.

On the last three positions of the hierarchy there are competences which are trained in time, usually after employment, and this might be a reason why they are not considered at the top of the list, but at the bottom of it. For example, the least important competence is to manage small enterprises or individual businesses. As we’ve mentioned before, the difference between means among the first and the last options in the hierarchy doesn’t seem big, so we tested if the difference in rank assigned by the group of respondents is statistically significant by using the Wilcoxon test. As Table 3.2 shows, all the differences are significant.

The data illustrate that our subjects consider as most important the competences related to the establishment of appropriate relationships, followed by the intuition for innovation and mind openness, and finally, by the skills related to business management.

The Evaluations Made by the Group of Academics

Academics are in favor of the “Capacity to understand the clients’ needs,” followed by the “Ability to make decisions under uncertain circumstances” and the “Ability to form professional relationships” (see Table 3.3. for top five of competences from the academics’ point of view).

The entire list of competences is scored above 3 (3 stands for “Considerable” importance and 4 stands for “Strong” importance, as shown in Appendix 2.5). At the end of the hierarchy academics place competences like: “Social skills for professional activity in multicultural environments” ($M = 3.15$), “Skills to make deals” ($M = 3.15$), and “Competences to manage small enterprises or individual businesses” ($M = 3.11$). These abilities require experience and training accumulated in longer periods of time or in less common situations (e.g., in a multicultural environment).

The Evaluations Made by the Group of Employers

The first choice in the opinion of the employers is identical with the option made by the academics group and by the three groups altogether. They consider the “Capacity to understand customers’ needs” as being the most important, with a mean value of 3.63 – the highest value of the three groups (see Table 3.4). Two other options are found in the top five options of employers, and they are similar to the ones in the

academics group: “Capacity to evaluate perspectives for new ideas” ($M = 3.49$) and “Business ethics” ($M = 3.46$).

The results illustrate that employers place more emphasis on competences related to understanding business in more than one direction: relations with clients, business dynamics, innovation, and business ethics. A difference which opposes the answers of the employers to the ones of the academics is the placement of the “Capacity to make decisions under conditions of uncertainty” ($M = 3.14$) at the end of the hierarchy by the employers, while the academics placed it on the second position (see Appendix 2.5).

The other competences placed at the end of the hierarchy are similar to those selected by academics, one less expected ability being “Effective personal entrepreneurship behavior,” ($M = 3.14$). The last place is taken by “Competences to manage small enterprises or individual businesses,” with a mean value of 3.09. Once again, experts do not select competences that represent the key of a successful entrepreneur as being the most important during practical placement, probably because they don’t manifest so early in the process of professional training. Due to the size of the group any comparison within group is less trusted, even if we use nonparametric procedures.

The Evaluations Made by the Group of Students and Graduates

The evaluation of this group of respondents keeps 2 competences common with the group of employers and with the group of academics, with whom they share one more competence (see Table 3.5). The order of the competences established by the mean value of the answers is different, the first position being taken by the “Capacity to establish productive relationships,” followed by the “Capacity to identify possible opportunities for developing new products, markets, or business models,” and the “Ability to gain social capital (professional networking).” Similarly to the academics group, students and graduates consider as important the “Capacity to make decisions under conditions of uncertainty.” Overall, they seem to combine more skills related to interpersonal communication with those related to professional behavior (see Table 3.5).

The smallest values were received by two competences which are found at the end of the list in the previous analysis, namely, “Competences to manage small enterprises or individual businesses” ($M = 3.08$), and “Effective personal entrepreneurship behavior” ($M = 3.09$). On the last position of the list for this group there is a competence which is placed in the top five choices of the other two groups, namely “Business ethics” – $M = 3.03$ (see Appendix 2.5). This result may signify that the students and graduates don’t consider themselves directly responsible for the consequences of any decision involving business management as long as they work as apprentices. However, employers and academics give more importance to this matter and rank competences related to ethics in the first five positions.

We analyzed the existence of possible differences within group using as variables the gender of respondents, their age, and the year of graduation. The tests showed no statistical significance between subjects, with one exception: Students who graduated before 2008 consider “Effective personal entrepreneurship behavior” during practical placement as more important than the ones who graduated after 2008 or are still attending school, $t(57) = 2.49$, $p = .01$.

Similarities and Differences Among Groups

Similarities and differences among groups represent an interesting aspect, therefore a synthetic view of the common options of the groups is presented in Table 2.

The academics group and the employers group have in common the fact that they both focus on skills involved in daily activities that contribute to a successful career. Employers, even more than academics, are job oriented and they also place less emphasis on skills that are complex and require expertise. Students, on the other hand, don't place much emphasis on "Business ethics," but they consider as important abilities like making decisions under pressure and identifying opportunities for developing new products, markets, or business models. Entrepreneurial behavior manifested in an effective manner is rated as being of "Considerable importance" by the three groups (score 3), but this competence comes after competences which are less elaborate and easier to put into practice.

Table 2. Similarities and dissimilarities between the three groups concerning the most important entrepreneurial competences during practical placement

	Entrepreneurial competence	Group
The most important ones	Capacity to understand customers' needs Capacity to establish productive relationships	Academics, Employers & Students and graduates
	Business ethics Capacity to evaluate perspectives for new ideas	Academics & Employers
	Capacity to make decisions under conditions of uncertainty	Academics & Students and graduates
	Understanding of market dynamics in a particular field	Employers only
	Capacity to identify possible opportunities for developing new products, markets, or business models	Students and graduates only
	The least important ones	Competences to manage small enterprises or individual businesses Effective personal entrepreneurship behavior
Social skills for professional activity in multicultural environments Skills to make deals		Academics only
Capacity to make decisions under conditions of uncertainty		Employers only
Business ethics		Students and graduates only

The significance of the differences between the ways the three groups perceive the importance of practical competences can be pointed out using the one-way ANOVA analysis. The one-way ANOVA, $F(2, 179) = 5.81, p = .004$, demonstrated statistically significant differences between the three groups regarding the way they evaluated the level of importance for “Business ethics.” A closer analysis was performed by comparing the groups two by two, and the results reflected the following:

- The employers perceive the capacity to understand market dynamics in a particular field as more important than academics do, $t(101) = 2.50, p = .01$, and than the students & graduates do, $t(101) = 2.21, p = .03$.
- The opposite is true for the “Capacity to make decisions under conditions of uncertainty,” academics scoring in its favor, $t(101) = 2.30, p = .02$.

The Level of Achievement of Entrepreneurial Competences

Separately from scoring the level of importance of the entrepreneurial competences, the subjects were asked to evaluate the level of achievement reached by the competences during the practical placement. The answers were analyzed using the same scale (None-1; Weak-2; Considerable-3; Strong-4), and the analysis was performed for all groups together and then separately, showing some interesting results.

The results resemble the ones in the first part of the research and they reflect how the respondents perceive the development of the entrepreneurial competences during the practical placement. Table 3.7. presents a hierarchy of the level of achievement of the competences, and on the same row with each competence (immediately after its description) its rank of importance, as rated by the subjects, is written in parenthesis.

The respondents consider that students develop their competences during the practical placement at a level that ranges between “Weak” (2 points) and “Considerable” (3 points). The first positions in the hierarchy are occupied by social skills and the ability to establish appropriate relationships with clients. The components of these capacities have two distinct sides. One side refers to sociability, the ability to make social contacts and to communicate, and the other side is professional, referring to relationships that are characterized by proficiency in the field where someone works. The relationships are business relationships and professional networking sustained by adaptability in diverse environments. “Business ethics” is another competence that seems to be developed during the practical placement ($M = 2.82$) and it can be put in connection with professional relationships. The “Capacity to understand customers’ needs” ranked first in importance, turning out to be the second best achieved competence during the practical placement ($M = 2.91$).

In the middle section of the hierarchy are found competences linked with abilities to manage businesses such as: the “Capacity to evaluate perspectives for new ideas” (rank 6, $M = 2.78$), the “Understanding of market dynamics in a particular field” (rank 7, $M = 2.74$), the “Capacity to identify possible opportunities for developing new products, markets, or business models,” and the “Capacity to make decisions under conditions of uncertainty” (rank 9.5, $M = 2.70$).

At the end of the hierarchy there are three complex competences which are less achieved during the practical placement: “Skills to make deals” (rank 12, $M = 2.54$),

“Skills to develop new business ideas” (rank 13, $M = 2.53$), and “Competences to manage small enterprises or individual businesses” (rank 14, $M = 2.44$). The above competences are not formed during any academic class and they are not present in the academic curricula. The employers, as partners of the universities, don’t invest too much in developing these skills in students during the practical placement for obvious reasons: the students are in the process of education and they are under-qualified from various points of view, it’s too soon and too risky to invest in human capital which does not offer any “paying back” guarantee, and, in addition, these competences require years of training and education. The “Competences to manage small enterprises or individual businesses” are considered not only as less achieved, but also as less important.

The statistical significance of the difference in rank value among the first and the last position in the hierarchy was another important aspect that needed to be tested. We carried out the Wilcoxon test and the results showed that the differences are not due to chance and that the rank contrast between them is significantly different.

The Evaluations Made by the Group of Academics

The group of academics includes seven different competences in the first five positions of the list (see Table 3.9) due to the fact that the mean value for 4 of them is identical. None of their evaluations reaches the significance of 3 points (considerable), as it ranges between 2.85 for the first position (“Capacity to establish productive relationships”) and 2.42 for the last one (“Skills to develop new business ideas”).

The evaluation of the academics placed an emphasis on the abilities that have to do with direct work with clients or with concrete job requirements. The first three abilities are similar to those indicated by the global evaluation, but the following three abilities (with equal mean values of 2.70) differ from the options presented earlier. The academics consider that practical placement is a period which offers contact with real work tasks, and opportunities to learn and to apply real work demands. The “Understanding of market dynamics in a particular field” is ranked 5 in the hierarchy, together with the “Capacity to identify possible opportunities for developing new products, markets, or business models” and with the “Capacity to evaluate the external environment.” On the same position academics place “Business ethics,” followed by the “Capacity to evaluate perspectives for new ideas,” a capacity that is not so closely related to professional behavior.

The least achieved competences according to the academics’ opinion are similar to the least achieved ones according to the general opinion, namely, the “Skills to make deals” ($M = 2.46$), the “Competences to manage small enterprises or individual businesses” ($M = 2.45$), and the “Skills to develop new business ideas” ($M = 2.42$), these three being placed at the bottom of the hierarchy.

The Evaluation Made by the Group of Employers

The scores marked by the employers differ in ranks from those marked by the academics. The employers group considers that during the practical placement students learn more about the professional interrelation and about business ethics. In the opinion of the employers, the students’ capacity to understand customers’ needs develops to a “considerable” level ($M = 3.03$). The second rank is occupied by

“Business ethics,” with a mean value very close to the previous rank ($M = 3.0$). Given the multinationality of the group (and implicitly the multiculturalism), it seems that the respondents are sensitive to the multicultural factors involved in their work, and they consider that students are able to also take these aspects into consideration.

While the social skills are appreciated at a higher level, the “Competences to manage small enterprises or individual businesses” and the “Skills to make deals” are less achieved by the students judging by the way the employers made their selection in the questionnaire. The last positions on the list are similar to the options of all the three groups together and to those of the academics, with one exception: Employers consider that the “Capacity to identify possible opportunities for developing new products, markets, or business models” is less attained during the practical placement ($M = 2.57$).

The Evaluation Made by the Group of Students and Graduates

Students and graduates are more satisfied with the level of achievement of the “Capacity to establish productive relationships,” ranking it with the highest mean score among all three groups ($M = 3.19$). Their selections are also centered on the professional social skills. A more favorable position is obtained by the “Capacity to make decisions under conditions of uncertainty” ($M = 2.90$), which is higher than in the other two groups.

The bottom of the list contains competences that refer to business management and entrepreneurial behavior. However, the mean value for the achievement of these competences seems higher than for those selected by academics group.

Within the students and graduates group, the t tests revealed some differences:

- Older students score with higher points the level of achievement of the “Capacity to evaluate the external environment,” $t(76) = 2.45$, $p = .01$, and the level of achievement of the “Skills to develop new business ideas,” $t(77) = 2.92$, $p = .005$.
- Former students who graduated before 2008 also consider the “Capacity to evaluate the external environment” as higher achieved during the practical placement, $t(57) = 2.01$, $p = .04$.
- Students who graduated after 2008 consider that “Business ethics” is better acquired during the practical placement, as compared to those who graduated before 2008, $t(57) = 2.34$, $p = .02$.

Age might be the key factor in the explanation: older students are more prone to initiative and to complex analysis that includes external factors (not only “on hand” factors). As far as the business ethics matter is concerned, it is possible that in recent years the stakeholders have placed emphasis on ethics, and consequently the younger students acknowledge it.

An evaluation of the similarities and differences between the three groups seems interesting to look at, and therefore we carried out the one-way ANOVA and the post hoc Games-Howell tests in order to identify the desired results (see Table 3 and Figure 1).

Table 3. Differences in scoring the level of achievement of entrepreneurial competences among the groups of respondents – the ANOVA test

		Sum of Squares	df	Mean Square	F	Sig.
CA7	Between Groups	5.392	2	2.696	3.836	.023
	Within Groups	124.408	177	.703		
	Total	129.800	179			
CA8	Between Groups	5.755	2	2.877	4.982	.008
	Within Groups	102.223	177	.578		
	Total	107.978	179			
CA13	Between Groups	8.354	2	4.177	6.038	.003
	Within Groups	122.446	177	.692		
	Total	130.800	179			

The test results demonstrated differences concerning the following competences:

- The “Capacity to make decisions under conditions of uncertainty,” $F(2, 177) = 3.833, p = .02$: The post hoc analysis showed that the students and graduates scored higher than the academics (Games-Howell difference = .36, $p = .02$).
- The “Capacity to establish productive relationships,” $F(2, 177) = 4.98, p = .008$: The students and graduates consider this capacity as more highly achieved during practice, as compared to the academics (Games-Howell difference = .34, $p = .02$) and also as compared to the employers (Games-Howell difference = .39, $p = .02$).

The “Social skills for professional activity in multicultural environments” was scored lower by the academics, $F(2, 177) = 6.03, p = .003$. The post hoc analysis was near the threshold of significance ($p = .06$) with the employers scoring it with .39 points in average more than the academics, and above significance, the students and graduates scoring it with .46 more points in average (Games-Howell difference = .46, $p = .002$). Beside the items presented in the table, all the other items showed no statistical significance regarding the level at which the three groups appreciated the competences. To sum up, students seem to be more content with the level of achievement of several competences and academics seem to be more reserved in their appreciations (see Figure 1).

For ranking the competences we used the mean values of the scores, and, the results indicate numerous similarities and differences.

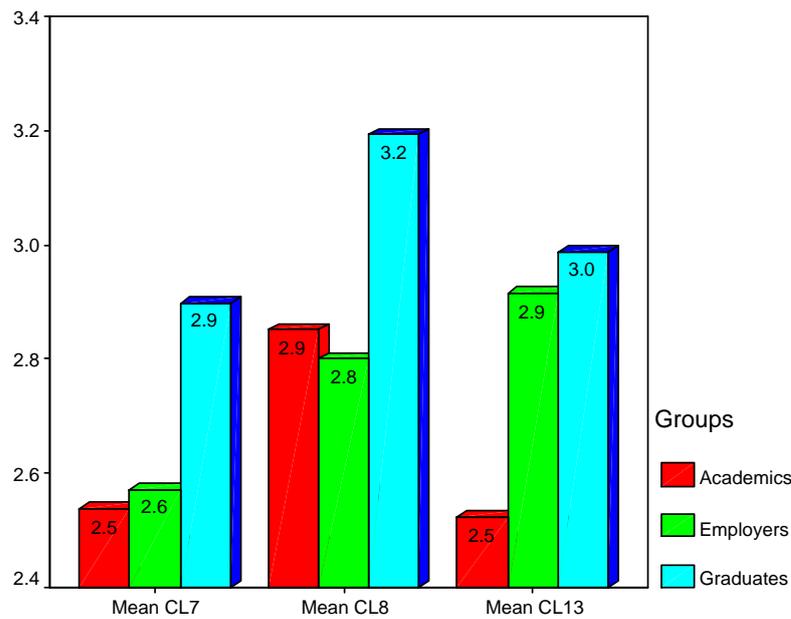


Figure 1. Differences in the level of achievement of entrepreneurial competences

The analysis of the hierarchy resulted from the answers of the participants indicates that all three groups rank higher the “Capacity to understand customers’ needs” and the “Capacity to establish productive relationship,” which means that a lot of emphasis is placed upon these competences (see Table 4).

Table 4. Similarities and dissimilarities between the three groups concerning the level of achievement of entrepreneurial competences during practical placement

	Entrepreneurial competence	Group
The most important ones	Capacity to understand customers’ needs Capacity to establish productive relationships	Academics, Employers & Students and graduates
	Business ethics Capacity to evaluate perspectives for new ideas	Academics & Employers
	Capacity to make decisions under conditions of uncertainty	Academics & Students and graduates
	Ability to gain social capital (professional networking)	Employers & Students and graduates
	Understanding of market dynamics in a particular field	Employers only
	Capacity to identify possible opportunities for developing new products, markets, or business models	Students and graduates only

The least important ones	Competences to manage small enterprises or individual businesses	Academics, Employers & Students and graduates
	Effective personal entrepreneurship behavior	Employers & Students and graduates
	Social skills for professional activity in multicultural environments	Academics only
	Skills to make deals	
	Capacity to evaluate the external environment	Employers only
	Capacity to make decisions under conditions of uncertainty	
	Business ethics	Students and graduates only

It is important to highlight that the competences presented above are almost identical to those summarized in Table 2, which presents the judgment of the respondents regarding the importance of the competences. The responses are consistent and the students benefit from the most important aspects of the practical placement.

Differences Between the Level of Importance of Entrepreneurial Competences and Their Actual Level of Achievement

The participants in the study were asked to score the importance of the competences and their level of achievement during the practical placement. The differences between the choices of the participants were analyzed using the paired-samples *t* test. All the results were statistically significant, meaning that the degree of development is smaller than the importance each competence has.

Table 5. Differences of mean between the level of importance and the level of achievement of entrepreneurial competences according to all respondents

	Item	Mean difference	SD	<i>t</i>	<i>p</i>	Effect size
Pair 1	CI1 - CA1	.66	.88	9.994	< .001	.76
Pair 2	CI2 - CA2	.51	.81	8.390	< .001	.62
Pair 3	CI3 - CA3	.61	.94	8.761	< .001	.77
Pair 4	CI4 - CA4	.56	.88	8.564	< .001	.69
Pair 5	CI5 - CA5	.47	.84	7.586	< .001	.63
Pair 6	CI6 - CA6	.57	.87	8.871	< .001	.77
Pair 7	CI7 - CA7	.67	1.00	8.919	< .001	.86
Pair 8	CI8 - CA8	.47	.82	7.710	< .001	.63
Pair 9	CI9 - CA9	.69	.95	9.758	< .001	.81
Pair 10	CI10 - CA10	.66	1.06	8.384	< .001	.75

	Item	Mean difference	SD	<i>t</i>	<i>p</i>	Effect size
Pair 11	CI11 - CA11	.51	.86	8.016	< .001	.65
Pair 12	CI12 - CA12	.58	.89	8.795	< .001	.73
Pair 13	CI13 - CA13	.46	.81	7.571	< .001	.57
Pair 14	CI14 - CA14	.43	.83	6.894	< .001	.50

Table 5 includes the value of the effect size (Cohen’s test) that measures how important the differences between the mean values of the variables are. The effect size is symbolized with *d* and it is interpreted as follows: positive values indicate that the first variable has higher scores than the second variable, the values up to .20 indicate a small effect size, values around .50 indicate that the difference between the variables is medium, and values close to .80 indicate that the difference is important.

In our research the effect size takes values between medium and high, with the most significant difference between the importance of the “Capacity to make decisions under conditions of uncertainty” and the level at which this competence is developed during the practical placement ($d = .86$). The previous analysis determined that this competence is third in the rank of importance and ninth in the rank of achievement.

Beside the above example, there are five more competences which show high differences between their perceived importance and their level of improvement during practical placement (pairs 1, 3, 6, 9, and 10). The effect size offers information regarding the relevance of the difference between means, irrespective of the rank of the competence. Figure 2 offers a more complete view of the differences between the level of importance and the level of achievement of the fourteen competences. The lines show the mean values of each item, and the higher the value, the higher the rank.

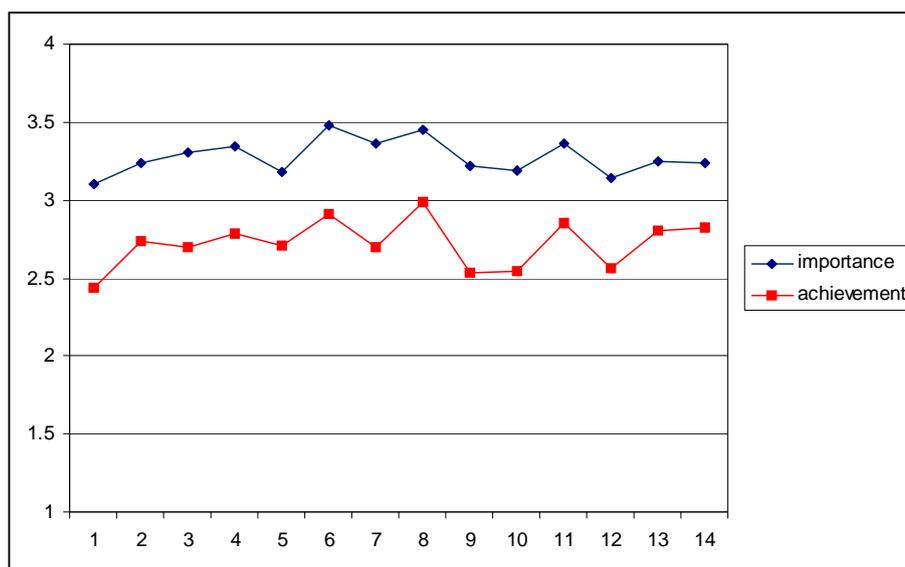


Figure 2. The level of importance and the level of achievement of the fourteen entrepreneurial competences

A deeper analysis demonstrated that there are almost no differences between the opinions belonging to the three groups, meaning that, even if we separate the answers given by each group, all the results would reflect the same discrepancy between the level of importance and the level of achievement of the competences. However, there is one exception: The students and graduates group considers that “Business ethics” is achieved at a level that is similar to its importance (with a mean value of 3.03 for its importance and 2.85 for its achievement).

The values of the two assessed parameters vary almost in parallel, which means that there are no important contradictions in terms of the role that the practical placement plays in modeling the proficiency of students. The more important a skill is, the better achieved it seems to be, or at least the discrepancy does not oppose the desired effect.

Opinions of Participants on the University–Enterprise Partnership Regarding the Training of Entrepreneurial Competences

The open questions of the questionnaires (questions 17 to 23) aimed to identify the main issues related to the influences of practical placement on the employability of the graduates and on the development of their entrepreneurial spirit. The three groups of respondents expressed freely their opinions on topics related to these influences.

The questions belonging to this part of the questionnaire could be grouped into the following topics:

1. Are the hosting companies places where students can learn “hands-on” the competences which give them the possibility to find a good job easier, or even to develop their own business after they graduate? (Question 17 to 19)
2. In which way do these companies develop entrepreneurial competences during and by means of practical placement? (Question 20)
3. What are the changes that the universities should operate in their policies and in their curricula from the point of view of the three groups of respondents? (Question 21 and 22)
4. What is the future role of the companies in supporting these changes? (Question 23)
5. What are the changes that the universities should operate in their policies and in their curricula from the point of view of the three groups of respondents? (Question 21 and 22)
6. What is the future role of the companies in supporting these changes? (Question 23)

Universities and Companies as Learning Environments for Entrepreneurship

Universities have their own culture, more or less entrepreneurial, which is according to the study programs they hold. It seems that most of the respondents, even the employers and the academics, are not completely aware of the fact that organizations are places where culture is transmitted and where personalities and behavioral patterns are shaped. When attending practical placement, students and graduates are confronted with a “cultural shock” that helps them to become more interested in the cultural aspects of the organization.

The main characteristics of the hosting company's culture might not be obvious for a student during his or her practical placement, but they certainly influence the competences he or she learns. Three of the questions were related to this issue: Q 17, Q 18, and Q 19.

These three questions prepare a later question – 20, on whether and how students in practical placement learn something about being an entrepreneur during this period.

Most of the respondents from the three groups answered to these questions with “No,” or with a simple “Yes,” without any further explanation. Some of them answered however with “Yes,” and gave explanations for that assertion. After analyzing the answers several issues can be outlined:

- The universities themselves are interested in becoming more entrepreneurial.
- In some universities there are special study programs for entrepreneurship, or special parts in the curriculum dedicated to the development of entrepreneurial competences.
- Most of the companies that host practical placements promote an entrepreneurial culture.

The open answers to items 21 and 22 of the questionnaires reveal a variety of opinions on the changes that should be made in the study programs in order to facilitate a better employability of the graduates, but also to ensure the acquisition of entrepreneurial competences. The latter are needed mainly by small and medium-sized enterprises and in the prospect of independent professional activities.

The main changes suggested by our respondents who answered to question 21 are related to several aspects of the university policies, such as:

- Changes in the curricular vision – what the main objectives of higher education are.
- Changes in curricula at different levels: aimed competences; contents, teaching methods, and the role of practical placement in each study program.
- Changes in preparing the students for practical placement and supervising them during this activity.
- Increasing the role of career centers in training employability and entrepreneurial skills.

One main change suggested by the respondents addresses the issue of practical placement. Nowadays, this is the main link between universities and enterprises. The answers to question 22 could be grouped according to the following aspects:

- Changes in practical placement policies.
- Creating infrastructure for practical placement in universities.
- Changes in the procedures of practical placement follow-up.
- Improving the pedagogical aspects of practical placement.
- Extension of the support provided by the university for the transitional stage to employment – the role of career centers.

Companies' Role in the Development of Entrepreneurial Competences of Students

It is time for employers from different fields to become completely aware of the importance of being involved in the education of their future employees. Under the conditions of change in the occupational structure and the rapid evolution of new fields of expertise, the universities cannot accomplish this difficult task without a close partnership with the enterprises, especially in training entrepreneurial competences.

Several suggestions were made by the respondents concerning the role of the companies in developing these competences:

- involving enterprises or companies in curriculum design;
- increasing the role of companies in students' training;
- acquiring entrepreneurial competences during practical placement;
- bringing specialists from enterprises into universities;
- working together with the university;
- increasing the role of the student in his or her own education.

There are great expectations on the side of the academics towards the enterprises, as well as great expectations on the side of employers and students towards the university and, consequently, some inherent difficulties.

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