

## ENTREPRENEURSHIP EDUCATION AT POLITEHNICA UNIVERSITY OF TIMISOARA, ROMANIA

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### **Abstract:**

Today universities are important actors of the innovation process as entrepreneur and, at the same time, they have a big contribution in the development of the entrepreneurship behavior. Universities are still focus on their traditional academic role of social reproduction and extension of certified knowledge (through the education, training and academic research activities), but placed them in a broader context as part of its new role in promoting innovation and entrepreneurship. This article describes important aspects of the knowledge transfer processes develop by universities in order to promote and develop entrepreneurship values, behavior and so, to increase their implication and contributions to local/regional economic development. In this context, there are presented some considerations about the new roles of universities in the knowledge based society and how knowledge transfer activities are developed by the university in order to support new entrepreneurs. In addition, a study focused on the entrepreneurship education as part of the non-business disciplines is shown, in particular within a technical and scientific university/faculty. In the final part of the article, are presented the research conclusions (as obstacles and success factors for the entrepreneurship education) and the knowledge map for describing the business competencies for the graduate students in the case of the Politehnica University of Timisoara, Faculty of Production and Transportation Management.

*Keywords: entrepreneurship, management, university, education, competencies*

# 1. INTRODUCTION

The entrepreneurship plays a central role in each economy, facilitating the economic development by incubating technological innovations, increasing economic efficiency, and creating new jobs (Shane and Venkataraman, 2000). At the same time, the entrepreneurial activity is usually associated with the market economy and the entrepreneurs are identified through their functions within the market.

The European Commission defines the entrepreneurial activity as “*the mind set and process (needed) to create and develop economic activity by blending risk-taking, creativity and/or innovation with sound management, within a new or an existing organization*” (European Commissions, 2008a,b).

Many other definitions describe the entrepreneurship concept in various ways. For example, it is seen as a set of phenomena associated with the mind-set, planning and activities that create and exchange value through the identification and employment of changes in resources, opportunities and/or innovation (Davis, 2007). The entrepreneurship is also considered by Carree et al. (1999) as a manifestation of the ability and willingness of individuals, by themselves or in a group, inside or outside the confines of a certain organization, to: (i) catch and use existing and create new economic possibilities (new products, new methods, new organizational plans and new product – market combinations); (ii) introduce their ideas and bring them to the market, overcoming uncertainty and other obstacles, taking decisions about place and way of resources allocation and usage of institutions.

Based on previous statements, some basic observations are made by Draghici et al. (2012). First, the entrepreneurship is the ability to take risks and to change the economic and social status, from the employee onto employer (or self-employee). Second, corporate entrepreneurship may be interpreted as the ability to establish general objective functions for the organisation, and to change the utility of full structure and resources of the corporation. Finally, the entrepreneurial activity in general, is regarded as the ability to engage as much as possible the entrepreneurs into processes of adjustment of the global economic objective function.

We notice that entrepreneurship is defined in various ways and, at the same time, the entrepreneurial activity has a different intensity over the world. Europe lags behind its competitors in developing the entrepreneurial activities and skills. Since 2002, the Eurobarometer surveys find that European Union (EU) citizens have smaller intentions to become entrepreneurs, and are more risk-averse than the American or Asian citizens. Moreover, in the EU a start-up tends to grow at a slower rate than in the United States (US) and the establishment conditions for start-up companies vary widely across Europe (European Commission, 2008b). EU also loss its competition with China, where are more high-expectation entrepreneurs that any other country. In this context, the European Commission recently proposed the “Entrepreneurship 2020 Action Plan” in order to revive the entrepreneurial spirit in Europe. This strategy emerged after a period of consultations with entrepreneurs and business support organizations, which put particular focus on promoting the spirit of entrepreneurship in schools and universities and on the entrepreneurial potential of fragile social groups.

Nevertheless, each strategy enforcing the entrepreneurial activity shall provide answers to the following questions (Bird, 1988; Boyd and Vozikis, 1994): What makes an entrepreneur? Specifically, what are the basic factors that lead an individual to be willing to become an entrepreneur? What determine his or her entrepreneurial intention (EI)? Consequently, the EI represent a prerequisite for the entrepreneurial activity and the role of entrepreneurship education is essential in enhancing the entrepreneurial intentions.

Bird (1988) defines intentionality as a state of mind directing personal attention, experience, and action toward a specific goal. This can be an intentional behavior (Bird 1988) or a predictor of planned entrepreneurial behavior (Krueger 1993). More specifically, EI can be defined as the commitment to start a new business (Krueger 1993) and in most career choice models it is considered the antecedent of entrepreneurial behavior.

EI is in its turn determined by attitudes, while attitudes are affected by “*exogenous influences*”, as traits and situational variables (Ajzen 1991; Krueger et al. 2000). To date, literature reports several determinants of the EI as extraversion, emotional stability, agreeableness, conscientiousness, and openness (Ciavarella et al. 2004), risk-taking propensity and self-efficacy (Zhao et al. 2005), exposure

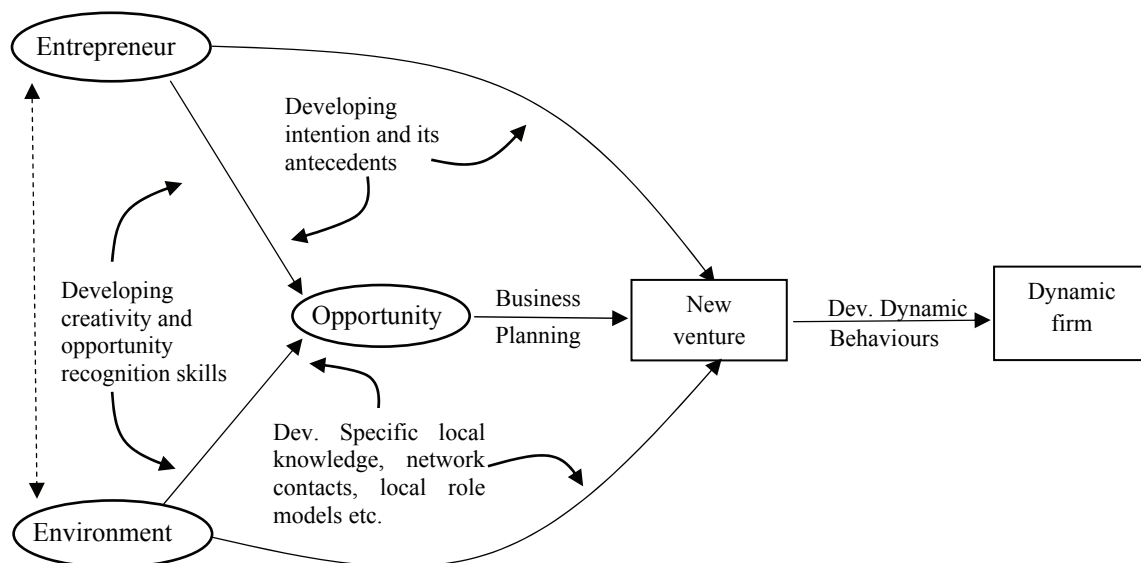
to entrepreneurial activity (Krueger 1993; Matthews and Moser 1996), gender (Wilson et al. 2007; Marlow and McAdam 2011). According to the above statements, we notice that the initiative and the determination to start own business is influenced to a significant extent by the willingness and abilities of the individuals, and therefore, the entrepreneurship education is essential. The youth orientation toward establishment of own business and the ability of risks mitigation are largely determined by what is emphasized in the process of training, at different stages of their education. Therefore, with a focus on the entrepreneurship education at Politehnica University of Timisoara, we try to provide answers to the following questions: What do the young people understand by the word “entrepreneurship”? According to them, what knowledge and experience should they have in order to become entrepreneurs? What knowledge and skills connected with entrepreneurship do they receive during the period of their education? What gaps do the youths find in regard to the entrepreneurship in their training? According to them, what should be emphasized during their education, so they can feel well prepared to start own business after graduating from university?

## 2. ENTREPRENEURIAL EDUCATION

### 2.1. The concept of entrepreneurial education

As mentioned above, amongst the determinants of EI, entrepreneurship education appears to be an important antecedent. Previous studies (Gorman et al. 1997; Henderson and Robertson 2000; Galloway and Brown 2002) show that there is clear linkage between the entrepreneurship education and entrepreneurial activities. If entrepreneurship is considered as a process where the entrepreneur interacts with his/her environment to identify an opportunity and, eventually, start a new venture, than educational interventions may act upon different elements of that process. Therefore, Figure 1 summarises different kinds of training activities identified so far, and their main effects.

**Figure 1:** Role of entrepreneurship education in the entrepreneurial process



Source: Liñán, 2007, p. 241.

From a conceptual point of view, the entrepreneurship education is defined in various ways (McIntyre and Roche, 1999). Entrepreneurship scholars have differing views regarding the meaning of the concept and the literature uses an extremely varied terminology to define the concept. For example, a timeless debate, focus on the differentiation between enterprise education and entrepreneurship education. The educational process takes place at different levels of deployment, and the keyword is the „graduate entrepreneurship”. At the same time, the entrepreneurship education is view as the process of providing individuals with skills in order to see opportunities that others have overlooked and to not hesitate to make decisions. Therefore, different from the vertical, classical approach of the national systems of education, with a focus on education cycles, the entrepreneurial education must be horizontal, associated with a minimum set of skills that every student must possess (Gibb, 2002). Moreover, the attitude, the creativity, the motivation, the networking and the organization skills are

considered as prerequisites for the correlation between faculty graduates and predisposition towards entrepreneurial behaviour (Nabi et al., 2006).

The pedagogical foundations for the development of enterprise education are also necessary, for elucidating the cultural gap between corporate and entrepreneurial values, manifested by the polarization between teaching and learning methods that persist in entrepreneurial education plan (Gibb, 1993; Draycott and Rae, 2009). Therefore, a series of studies discuss about the structure of lectures to be presented to future entrepreneurs (Garavan și O’Cinneide, 1994). These lectures shall be focused on providing information on business opportunities and encourage participants to think in terms of developing an entrepreneurial career. Subsequently, the educational spectrum is extended toward trainings for start-ups, in order to teach persons to become self-employees, to be able to reach a level of financial autonomy, or to learn about the growth and survival of relatively small businesses.

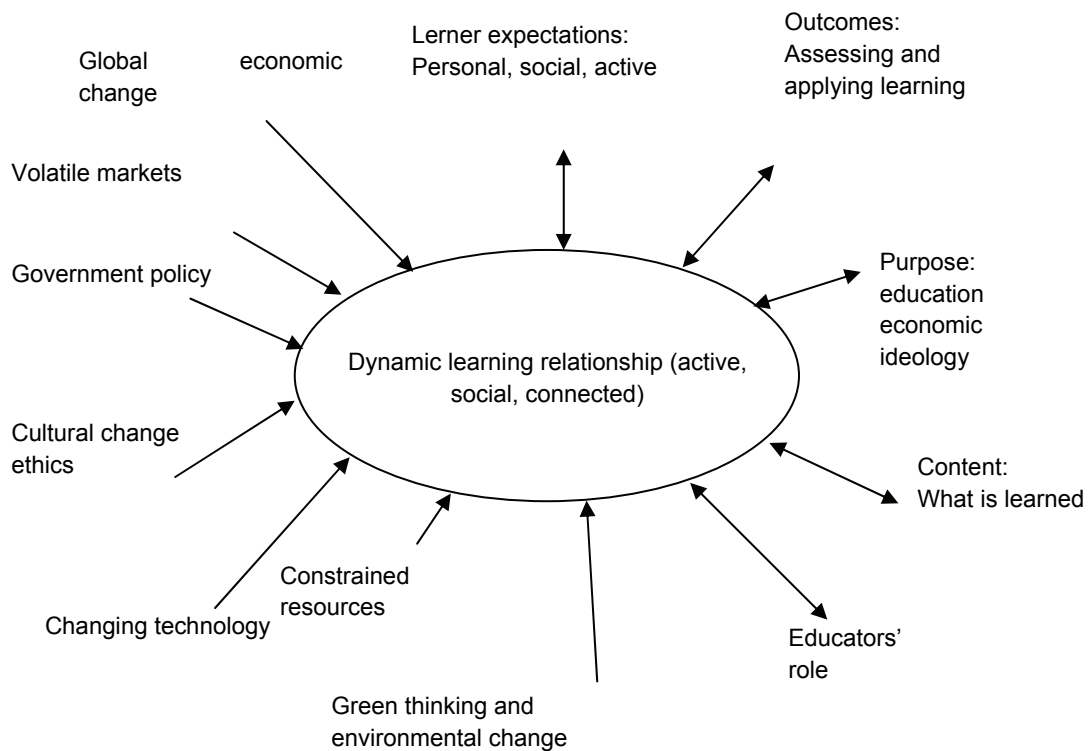
Another approach on entrepreneurship education (Pittaway and Cope, 2005) involves moving to experiential learning. The idea is to learn more “for” than “about” entrepreneurship, suggesting rather a focus on tangible results of a business plan than on entrepreneurial skills. To this end, the teacher can adopt different roles, using explicitly instruments for the entrepreneurial education in order to obtain greater clarity and consistency of purpose, process and practice (Hannon, 2005). Starting from this point, another concept appears in literature, namely “entrepreneurial learning”. This new term is associated with active learning, individual involvement, identity development and practical capacity (Deakins and Freel., 1998), and also with the ability to learn to recognize opportunities, to act, and to initiate and organize social business (Rae, 2004).

Different from the enterprise education, the entrepreneurship education involves learning driven by creativity, information, curiosity, excitement and their applicability in the context of real personal problems and opportunities (Penaluna and Penaluna, 2009). Moreover entrepreneurship literature suggests that potential “targets” for entrepreneurship education should derive from entrepreneurial process goals, which refers to raising entrepreneurial skills, developing entrepreneurial skills of individuals and initiate new business (Hytti et al., 2010).

This new learning context has profound implications to the psychological, social, economic, cultural and also educational level, because it changes the influences and, at the same time challenges the intellectual assumptions of entrepreneurship (Heinonen and Poikkijoki, 2006).

The entrepreneurship education is influenced by economic and market driven changes, learners’ expectations, government policies, technological, ethic and cultural changes (Figure 2).

**Figure 2:** Role of entrepreneurship education in the entrepreneurial process



Source: Rae, 2010, p 602.

These structural and attitudinal changes call for better entrepreneurial skills and abilities for dealing with uncertain current and future challenges. Therefore educational institutions, including universities, have to reconsider their role as promoters of entrepreneurship. In this new era the role of education is to shape ideas of what it means to be an entrepreneur, not to promote an ideology of entrepreneurship, and to create critical awareness that contributes to the accountability of the entrepreneurs to society.

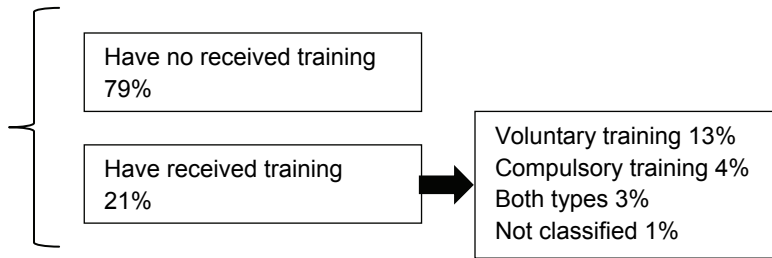
## 2.2. Entrepreneurial education: stylized facts

Before presenting the particularities regarding the entrepreneurial education in Politehnica University of Timisoara (Romania), we present some stylized facts regarding the entrepreneurial education in the world, with a focus on the European Union (EU) countries.

Coduras Martínez et al. (2010) present a special Global Entrepreneurship Monitor (GEM) report on “Entrepreneurship Education and Training”, covering 38 countries all over the world, based on expert opinions. In this report, entrepreneurship education is defined in broad terms as the building of knowledge and skills “about”, or “for the purpose” of entrepreneurship, as part of recognized education programs at all educational levels.

Several observations are made in this report. First, the average level of entrepreneurship education is reduced, especially in higher education institutions (Figure 3).

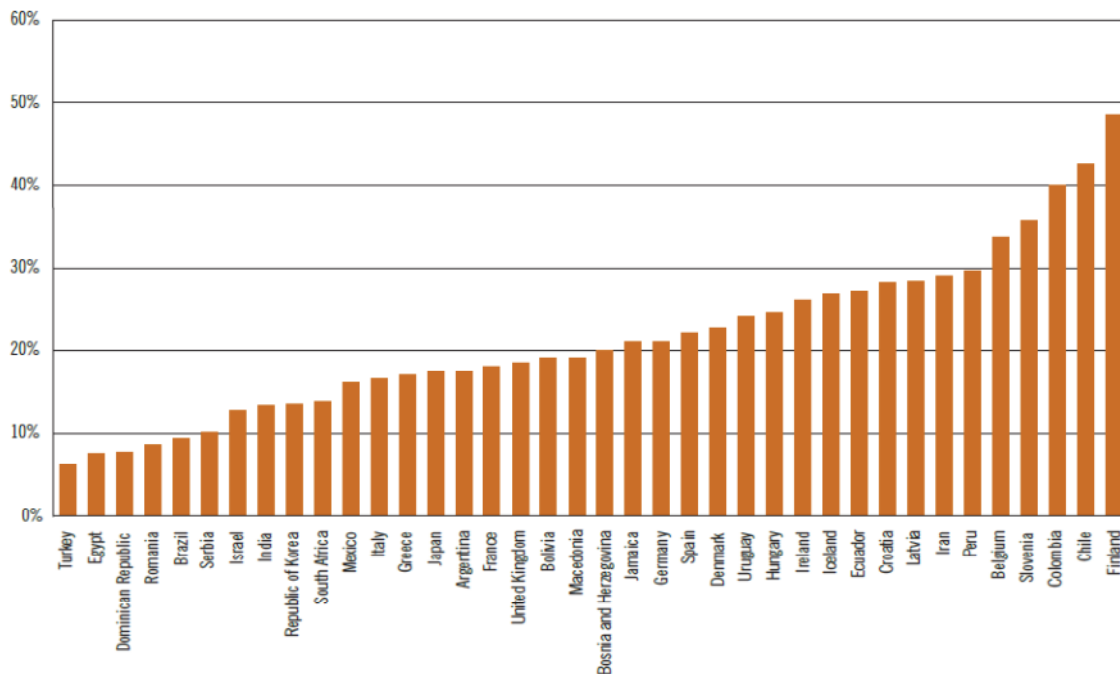
**Figure 3:** Average level of training in starting business in the adult population (18-64 years)



Source: Coduras Martínez et al., 2010, p 20.

Second, the entrepreneurial education is not correlated with the economic development level, or with the economic culture. While in Finland almost 50% of the adult population received training for starting business, other European countries as Romania and Serbia lags far behind. This situation is also noticed in the Latin America, where Chile and Colombia has a totally entrepreneurial culture as compared to Brazil for example (Figure 4).

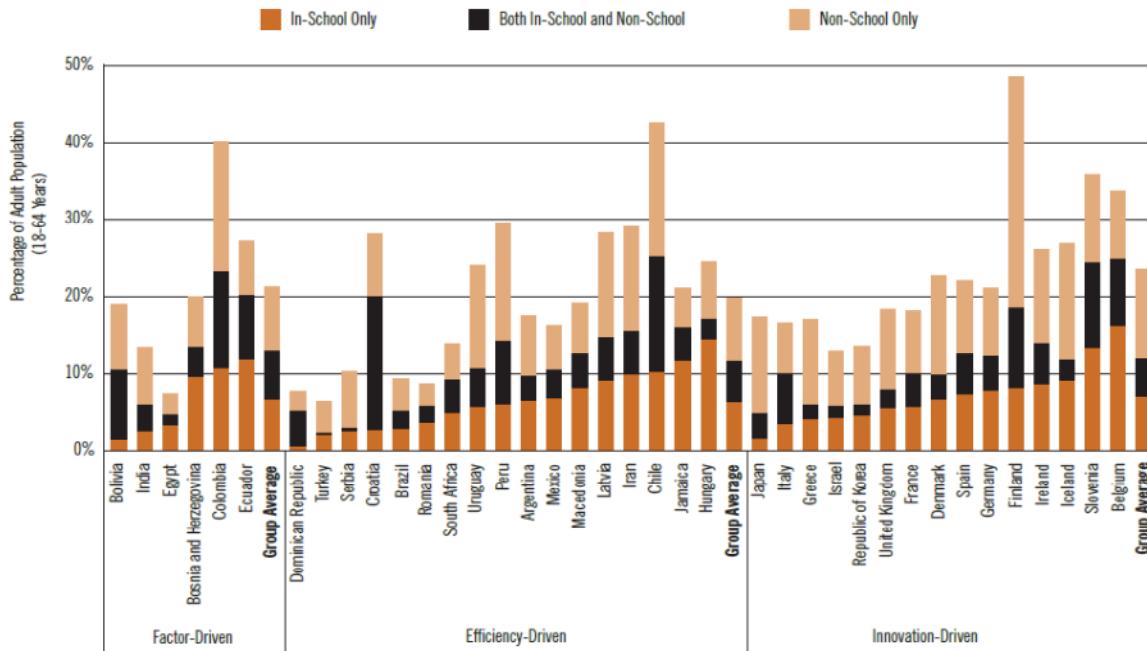
**Figure 4:** Percentage of the adult population (18-64 years) that received training in starting a business



Source: Coduras Martínez et al., 2010, p 21.

Finally, the entrepreneurship education in most of the cases is made out of school, with few exceptions (Belgium, Hungary, Jamaica, and Ecuador). A small percentage of the trained population received training both in-school and non-school (Figure 5).

**Figure 5:** Prevalence of in-school and non-school training by economic group

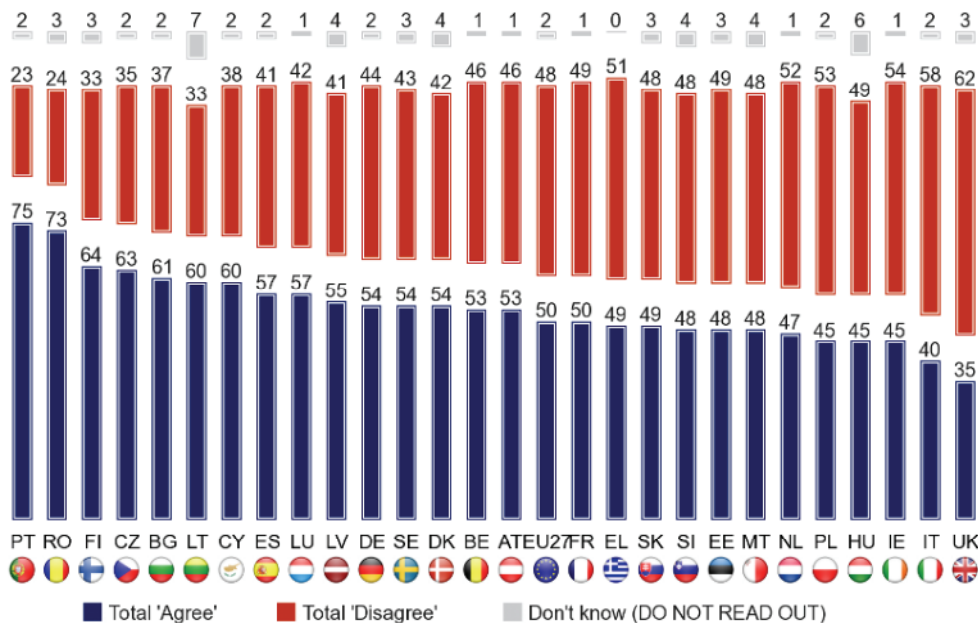


Source: Coduras Martinez et al., 2010, p 24.

The Flash Eurobarometer presented by the European Commission (2012) shows that the heterogeneity of entrepreneurial intentions in the EU member states is very heterogeneous. According to the “Europe 2020” strategy, the European Commission is focusing on encouraging unemployed people to start businesses, on improving the sustainability of self-employed businesses, and on supporting social entrepreneurs. Therefore, the accent shall fall on the entrepreneurship education.

At EU level only 23% of the respondents have taken part in schools or universities at any course or activity about entrepreneurship. At individual country level, the data show that in Finland and Netherlands, 38% and respectively 36% of the respondents have taken part in an entrepreneurship course. The opposite applies for Malta and UK, with 15%. However, most of respondents recognize that school education is important for helping them to become entrepreneurs (Figure 6).

Figure 6: The importance of school education for developing the entrepreneurial attitude



Source: European Commission, 2012, p 121.

### 3. PARTICULARITIES REGARDING THE ENTREPRENEURIAL EDUCATION IN POLITEHNICA UNIVERSITY OF TIMISOARA

#### 3.1. Students' perceptions and attitudes towards entrepreneurship

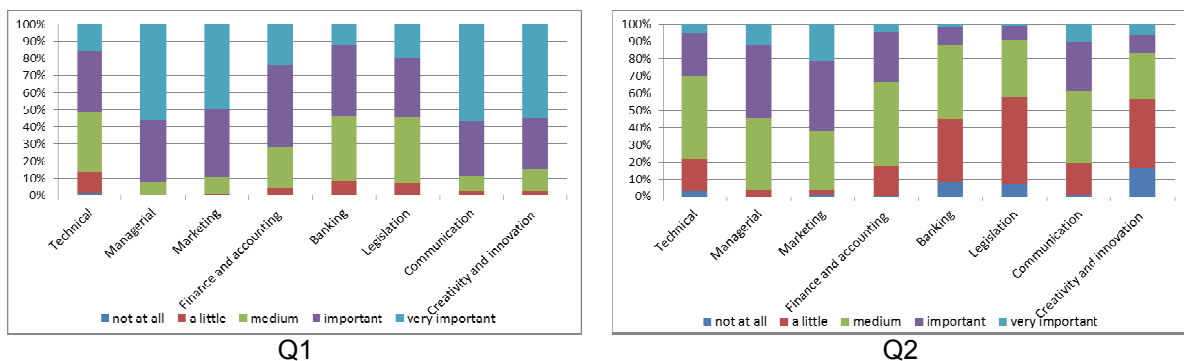
In order to provide an adequate educational and training feed-back to the students' needs regarding the development of their entrepreneurial skills and knowledge, the Management Department from the Politehnica University of Timisoara launched in 2011 an ample questionnaire for bachelor and master students. Given the number of students, the probability of distinguishing alternatives for answers and the acceptable margin of error, the minimum sample size was established at 230 filled in questionnaires. A five-level Likert-type scale was used. The total number of questionnaires received was 232.

In this section we present the analysis of the main questions regarding the students' opinion on the entrepreneurial education at the Politehnica University of Timisoara (the first set), and about what this institution shall do in order to prepare them to become entrepreneurs (the second set of questions). The first set contains the following questions (the answers are presented in Figure 7):

Q1 - How important do you consider the following categories of knowledge for starting your business?

Q2 - How much knowledge do you think you gain in the following fields at your university?

**Figure 7:** Students' perception about the current state of the entrepreneurial education



Source: Own calculations.

Students consider that the communication, creativity and innovation, but also the managerial skills are very important for starting a business (over 55%). The marketing together with finance and accounting skills lack behind, while the interest for technical, banking and legislation knowledge is less important in their opinion. At the same time, they consider that Politehnica University of Timisoara offers an important entrepreneurial education in terms of marketing and managerial skills, but little attention is paid to creativity and innovation skills.

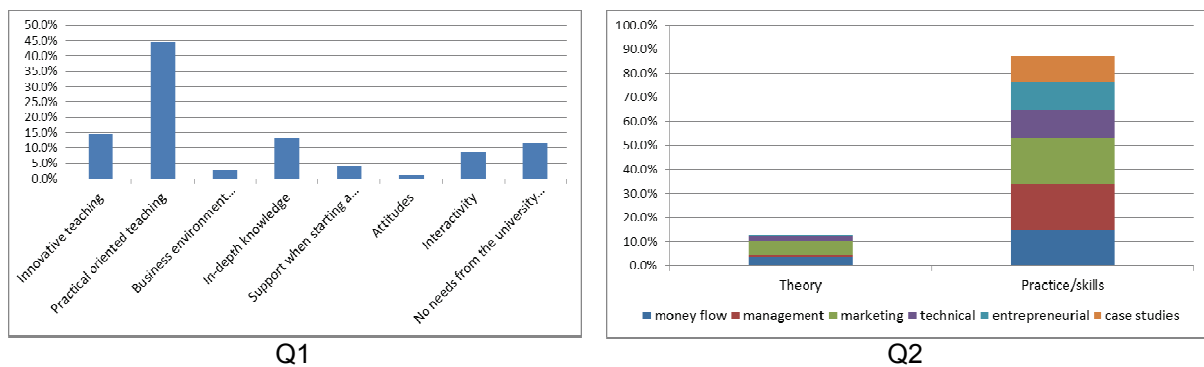
The second set of questions aims to highlight the students' expectations regarding the entrepreneurial education provided by Politehnica University of Timisoara (Figure 8).

Q3 - What are those issues, which I need, but my university doesn't give me?

Q4 - On what should be emphasized the entrepreneurial education at the university so that you can feel well prepared to start your own business after graduating?



**Figure 8:** Students' perception on what shall be the entrepreneurial education at the Politehnica University of Timisoara



Source: Own calculations.

Figure 8 shows that students claim the lack of the practically oriented teaching, and of the innovative teaching. Over 40% of respondents consider that Politehnica University of Timisoara does not provide a practical support for their needs. Furthermore, only 11% consider that theoretical issues are more important than the practical ones. From those who expect more practical/skill oriented teaching activities, over 20% believe that practical managerial and marketing skills are the most important, while only 13% find that entrepreneurial skills are crucial for starting a business after graduation. Even if curious, these results can be explained by the lack of detailed knowledge transmitted to students about what the entrepreneurial education means.

### 3.2. Entrepreneurial education and initiatives at Politehnica University of Timisoara

Against this background, Politehnica University of Timisoara undertook during the last years a series of measures in order to improve the entrepreneurial education level. These measures aim to improve the quality of courses thought to students and the development of PhD theses in the entrepreneurial field, to conclude internship agreements with the industry and to get involved in research and educational programs in order to foster the entrepreneurial activity.

First, the courses thought at the Faculty of Management in Production and Transportation gained an important entrepreneurial orientation. A new master program was developed, called "Entrepreneurial Management in Business Administration". In the same line, a series of PhD theses investigate the passage from the economy based on resources to the economy based on knowledge. The research subjects addressed by these PhD theses, include: (i) the identification of the small and medium size enterprises performance and development perspectives, (ii) the analysis of the institutional and legislative framework's influence on the new start-ups, (iii) the approach of the managerial process manifestation at the level of the small and medium size enterprises, imposes it as a distinct field, however integrated to the general management (Draghici et al., 2012).

Second, Politehnica University of Timisoara concluded with the industry a series of internship agreements for its students. The students are interested in participating to attractive internships in order to increase their employment chances after graduating the university.

Third, the entrepreneurial increased orientation of Politehnica University of Timisoara is achieved through different research and educational programs developed by the staff of the Department of Management. The first project in this area was the "Partnership for Excellence in Research for the Entrepreneurial Skills and Competitive Human Capital Development in the Knowledge and Innovation Base Society – CE@ANPART" project, running from 2007 to 2010. The project contributed to increasing the competitiveness in the field of entrepreneurial abilities, by developing an excellence research partnership between Romanian universities. The second project, "Certified EU Research-Entrepreneur, a Leonardo da Vinci Multilateral project for the Development of Innovation – ResEUr", was initiated in 2009 by several European universities and consultancy firms, including Politehnica University of Timisoara, in collaboration with the European Certification and Qualification Association (ECQA). The purpose of ResEUr was to deliver to innovative researchers an ECQA certification regarding the gained entrepreneurial knowledge by attending the courses developed under the project. This certification was meant to determine if their work and/or their ideas have a market

potential. The project outcome was represented by a skill set which clearly described the skills required for a researcher to turn his/her ideas into marketable products (Draghici et al., 2012). In the same line, in 2010 Politehnica University of Timisoara and “Angel Kunchev” University from Ruse (Bulgaria) started a bilateral project, entitled “Comparative Study Regarding the Training Needs for the Development of Entrepreneurial Competences within E.U. Post-Integration”, for the period 2010-2012. The purpose was to develop the collaboration between the two universities in the entrepreneurship domain, by facilitating the exchange of information and experience, and through common research studies (Pugna et al., 2012). Finally, Politehnica University of Timisoara became partner in the educational project named “The impact of educational system over entrepreneurial dynamic”, carried out through the programme “Postdoctoral studies in Economics: training program for elite researchers - SPODE”, co-funded by European Social Fund. The purpose is to foster the entrepreneurial phenomenon, especially in Romania and its neighbourhood countries.

#### 4. CONCLUSIONS

Nowadays, entrepreneurship learning exceeds the limits implied by the formal level of education in a classroom or seminar, assuming the possibility or chance to learn by experimentation, discovery and challenge. Therefore, a particular focus shall fall on the role of entrepreneurial education, as well as on its characteristics and determinants. While the large majority of studies revealing students' attitude in relation to the entrepreneurial phenomenon are conducted in developed countries, where there are formal and informal well-established educational systems, only few studies are conducted in developing countries. Our study contributes thus to the last strand of research, with a focus on the particularities regarding the entrepreneurial education in Politehnica University of Timisoara (Romania).

Our research shows that the interest for an enhanced entrepreneurial education is considerable, both at European and global level. In the particular case of Politehnica University of Timisoara, the situation is similar, as an increased interest appears for more entrepreneurial oriented courses and for research projects in this field. Starting from the students' perceptions and expectations regarding the entrepreneurial education in this institution, a series of measures were undertaken during the last years, in order to improve the quality of the entrepreneurial education: lectures adaptation to students' entrepreneurial needs, internship agreements and an enhanced collaboration with the industry, research and educational programs in the entrepreneurship area.

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