

ENTREPRENEURIAL SKILLS DEVELOPMENT USING A LIFELONG LEARNING PROGRAM

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Abstract: The paper presents a specific approach for defining a new job role so call Research-Entrepreneur that will be trained and certified at the European level with the support of a Life Long Learning Program. These processes are supported by an e-learning platform developed by the European Certification and Qualification Association (ECQA) in the last ten years. After a brief description of the Research-Entrepreneur skill card definition there are presented the skills acquisition within the platform, the methodology of the skill sets provision and the qualification and certification procedures.

1. INTRODUCTION – ENTREPRENEURSHIP STATUS IN EUROPE

The European Commission defines *Entrepreneurship* 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” [5]. Small (less than 50 employees) and medium-sized (less than 250 employees) enterprises (SME) are considered the backbone of the European economy, providing jobs for millions of European citizens and are the basis for economic innovation. However, conditions for SMEs and start-up companies are not as favorable in the European Union (EU) as they are in the United States and entrepreneurial initiative and risk-taking are less developed. Since 2002 Eurobarometer surveys found that EU citizens are less inclined to become entrepreneurs, and more risk-averse than their American or China counterparts. Once a new company has been created, it also tends to grow at a slower rate than in the United States. Moreover, conditions for start-up companies vary widely across Europe [5].

Analyzing the world map of high-expectations entrepreneurship there is still an American dream in USA – the rate of high-expectation entrepreneurship in the general population is very high in North America, 15 in every 1,000 US adults; there is a new ambition capital of the world for China – there are more high-expectation entrepreneurs that any other country, with 17 in every 1,000 adults rate; Europe has limited levels of high-expectation entrepreneurship – just 4 in every 1,000 European adults are entrepreneurs with high-growth expectation – the lowest proportion of all world regions [13]. In the same time, the last GEM report has demonstrated a consistent U-shaped association between a country’s level of economic development and its level and type of entrepreneurial activity [1].

The EU recognized the problem and made entrepreneurship one of the main objectives of the Lisbon agenda in 2000. Responding to this, the Commission launched a series of initiatives aimed at fostering support for small businesses in the EU. In January 2003, it adopted a “Green Paper on Entrepreneurship in Europe” to stimulate the debate amongst policy makers, businesses, representative organizations and experts on how entrepreneurship can be better promoted in Europe. This paper set out to find answers to two fundamental issues: 'How to produce more entrepreneurs?' and 'How to get more firms to grow?' [9].

An entrepreneurial attitude is characterized by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals or aims held in common with others, including the organization level. Education can contribute to encouraging

entrepreneurship, by fostering the right mindset, by raising awareness of career opportunities as an entrepreneur or a self-employed person, and by providing the relevant business skills [3].

Even the GEM 2008 report has a special topic regarding entrepreneurship education and training. 38 GEM countries collected additional data on entrepreneurship education and training through their Adult Population Survey. Every respondent was asked if they had had training in starting a business during or after school, and whether this was voluntary or compulsory. For after-school training, the nature of the training provider was also obtained. This provided national-level estimates of the *quantity* of entrepreneurship education and training in each nation, and of the relative importance of different types of provider [1].

The report shows that in most countries, the proportion of individuals ever having had training in starting a business decreased with age. Women were significantly more likely to have received training in starting a business than men in only one country: Latvia. In all factor-driven countries, men were significantly more likely to have received training in starting a business than women. shows that the most frequent source of training was self-directed learning, such as reading or observing or working in other people’s businesses, followed by voluntary formal education and by voluntary training provided by a college or university but outside the formal education system. Other sources, such as business or trade organizations, government agencies, or employers, typically were used by 3% or less of individuals. Compulsory training was rarely reported by more than 1% of individuals. Figure 1 shows the frequency of use of this form of training by country and they are preferred in the innovation-driven economies [1].

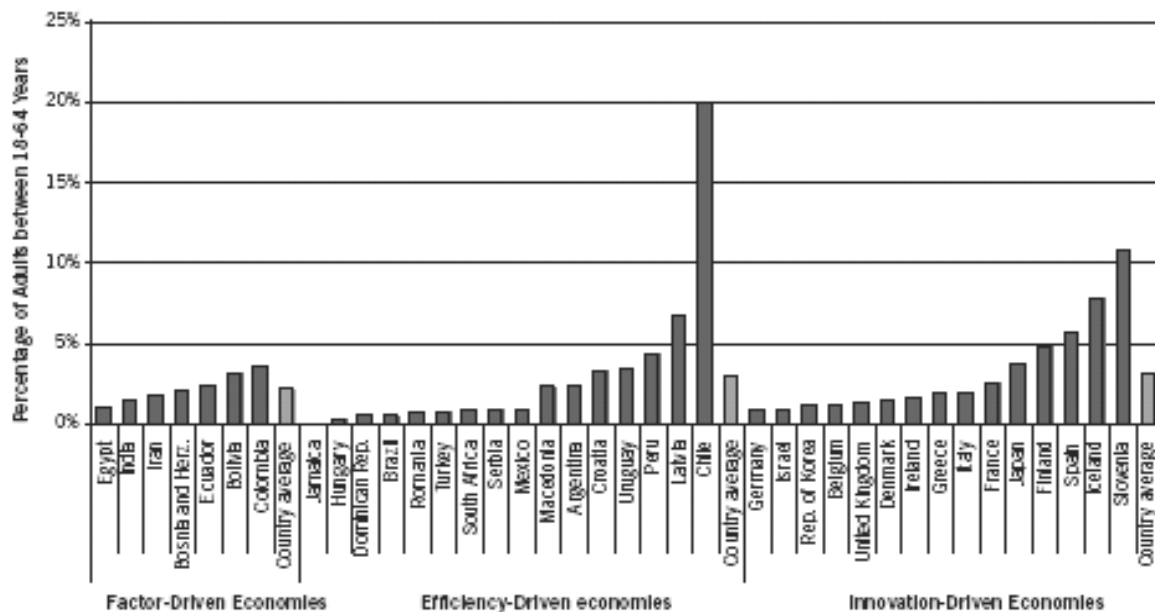


Figure 1. Percentage of adults aged 18-64 who have used online training in starting a business [1]

In summary, the quality and level of entrepreneurship education and training may have different impacts on attitudes, aspirations, and activity in countries at different stages of economic development. In factor-driven economies, the higher the quality and quantity of after-school training, the higher the levels of necessity entrepreneurship; this effect may be indirect in the case of females. This is because factor-driven economies provide few other opportunities for employment. In efficiency-driven economies, the more post-school training in starting a business, the higher the levels of market-expansion entrepreneurship, reflecting the growth of these economies. In innovation-driven economies, several negative correlations are apparent, possibly because governments with low levels of

entrepreneurial activity have been investing more in entrepreneurship education and training in an effort to increase entrepreneurial activity [1].

On the other hand the European Commission report in 2008, regarding entrepreneurship teaching was that it is not yet sufficiently integrated in higher education institutions' curricula. Available data show that the majority of entrepreneurship courses are offered in business and economic studies. The diffusion of entrepreneurship is particularly weak in some of the Member States that joined the European Union (EU) in and after 2004. However, it is questionable whether business schools are the most appropriate place to teach entrepreneurship: innovative and viable business ideas are more likely to arise from technical, scientific and creative studies. In this context, the challenge is to build interdisciplinary approaches, making entrepreneurship education accessible to all students specialization curricula, creating teams for the development and exploitation of business ideas, mixing students from economic and business studies with students from other faculties and with different backgrounds (by interdisciplinary training modules or courses) [4].

In the context of this paper, human resources training regarding their entrepreneurship competencies development have to be amplifying in the high education period and it has to continue with training during all professional life (as vocational training) with the support of the dedicated lifelong learning programs. This paper presents some important aspects of knowledge transfer processes developed by universities to become entrepreneurial and to increase their implication and contributions to human resources development at the local/regional economic level. These mechanisms are expected to contribute to economic development through universities roles: education, research and knowledge transfer to society [6]. At higher education level, the primary purpose of entrepreneurship education should be to develop entrepreneurial capacities and mindsets. In this context, entrepreneurship education programs can have different objectives, such as: (1) Developing entrepreneurial drive among students (raising awareness and motivation); (2) Training students in the skills they need to set-up a business and manage its growth; (3) Developing the entrepreneurial ability to identify and exploit opportunities [2], [12].

The paper debates the research-entrepreneur skill card development as a basis of the training program development.

2. DESCRIPTION OF THE ENTREPRENEURIAL SKILLS MAP

2.1. Brief Description of the ResEUr project

The motivation for the ResEUr project (Certified EU Research-Entrepreneur, a Leonardo da Vinci Multilateral project for the Development of Innovation, 503021-LLP-1-2009-1-BE-LEONARDO-LMP [10]) lies in the lack of a European-wide valid set of training modules and certification of entrepreneurial skills of young academic people. Europe is far from exploiting its potential of successful entrepreneurship in higher education, because it often fails to mobilize the right innovative resources and young brains. The proposed project aims at delivering to innovative researchers the qualification to determine if their work and/or their ideas have a market potential, as well as to be able to create a commercial interest for what they are doing.

The results envisaged are a skill set which clearly describes the skills required for a researcher to turn his ideas into marketable products, and thus to be able to create and develop a sustainable enterprise. For all the skill elements training material will be provided in several languages and in an e-learning environment. A pool of test questions will be defined, which provides the basis for the certification of students. All these elements will be verified with a number of students in the context of initial trainings and certifications.

Table 1. The ResEUr project partners

Partner no.	Organization name	Role in the project
1	EMIRAcle – European Manufacturing and Innovation Research Association – a cluster leading excellence Brussels, Belgium	Applicant
2	Politehnica University of Timisoara, Romania	Partner
3	Institute Polytechnique de Grenoble, France	Partner
4	International Software Consulting Network Ltd. Wicklow, Ireland	Partner
5	proHUMAN Cooperation and Business Management Ltd. Maribor, Slovenia	Partner
6	Skills International GmbH Grossklein, Austria	Partner

Table 1 shows the partners involved in this project. By its very composition, the proposed consortium will be able to exert a significant impact on a European level. To give examples, the applicant organization EMIRAcle unites a large pool of leading universities, who are all very active in leading-edge research as well as in organizing influential and recognized international conferences. Members are able to pre-select researchers based on a long-term observation of their works. International Software Consulting Network Ltd. Wicklow, Ireland (ISCN) as coordinator of the EuroSPI initiative runs a PhD selection program, where a number of international PhD students are assessed based on the innovation potential of their contributions to the topic of software and innovation process improvement. Grenoble INP has established a "House of Entrepreneurship", which is dedicated to mobilize researchers to turn their research results into successful innovations on the market.

2.2. Research-Entrepreneur Skills Development

The qualification and certification of Research-Entrepreneur addresses itself at experienced researchers (young researchers, PhD students from universities or industrial organizations), master students (of different specializations as industrial engineering and management) who want to complement and/or certify their advanced entrepreneurial skills. The target group students typically have availability and abilities for develop an entrepreneurship behavior (creativity, innovative initiatives etc.). The certificate, however, is supposed to certify the target group of student's capabilities as future entrepreneurs and/or to develop their entrepreneurial behavior. One of the biggest challenges is to conceive a training program that covers the complete skills set that better satisfy the target group specific needs.

As a preliminary research, each partner involved in the ResEUr project, has identify his target group and its specific needs (a number of unstructured interview were developed with potential students and also, with other companies and organizations that deliver training programs for entrepreneurs; preliminary observation of the local market specificity). Based on the collected information, during some virtual project meeting there have been established the working procedure and then it has been implemented for the development of the skill card.

Table 2. The Methodology Steps for the Skill Card Establishment (Nov. 2009 – March 2010)

No.	Stage of work (research developed)	Results
1.	Explaining the specificity of entrepreneurship training in the partner's organization or background of entrepreneurship training	Gain an important knowledge pool – Nov. 2009
2	Collect specific training programs in each partner's country Analyzing other projects with the same topics Collecting data about national organization that are actors in the field	Best practices; Critical analysis for the marketing niche identification and its definition (Kick-off meeting in Maribor, Slovenia) – Nov. 2009
3	Investigating the potential target groups by each partner (observations, interviews and marketing research using questionnaires)	The marketing niche definition/characterization Project advertizing
4	Virtual meetings for the skill card definition: skill units; skill elements; performance criteria and partner's responsibilities allocation	Complete skill card definition
5	Project meeting for the complete skill card definition: description of the content of each skill units and skill elements; defining the performance criteria and brief description of the skill units and elements. Harmonization of the partners' involvement.	Complete skill card definition with brief description of the components (project meeting in Grenoble, France) – March 2010
Preset status of the research-development and future activities:		
6	Virtual meetings for the best references discussions and collecting, best practices and case studies (in English and in the partners' own language)	Creating the background of references for the training materials development
7	Developing the training materials (prototype) and preliminary discussions during some virtual meetings	Courses .ppt files - prototype
8	Final form of the training materials and exercises definition and performance criteria establishment	Courses .ppt files (project meeting in Timisoara, Romania) – July 2010

Table 2 shows the adopted procedure for the establishment of the skill card and Figure 2 shows a knowledge map of the skill set which provides the basis of our research and development activities. It is the result of an initial consolidation of our experiences in research, education, as well as in collaboration with industrial partners, and other business organizations (e.g. Chamber of Commerce, students' organizations, clusters in the business environment etc.). Although we consider this skill set already stable, it is supposed to evolve in the implementation stage of the project as we involve experts from different research sectors, and get the feedback from partners in industry (from employees of the research and development departments) and academia and from students of initial training seminars.

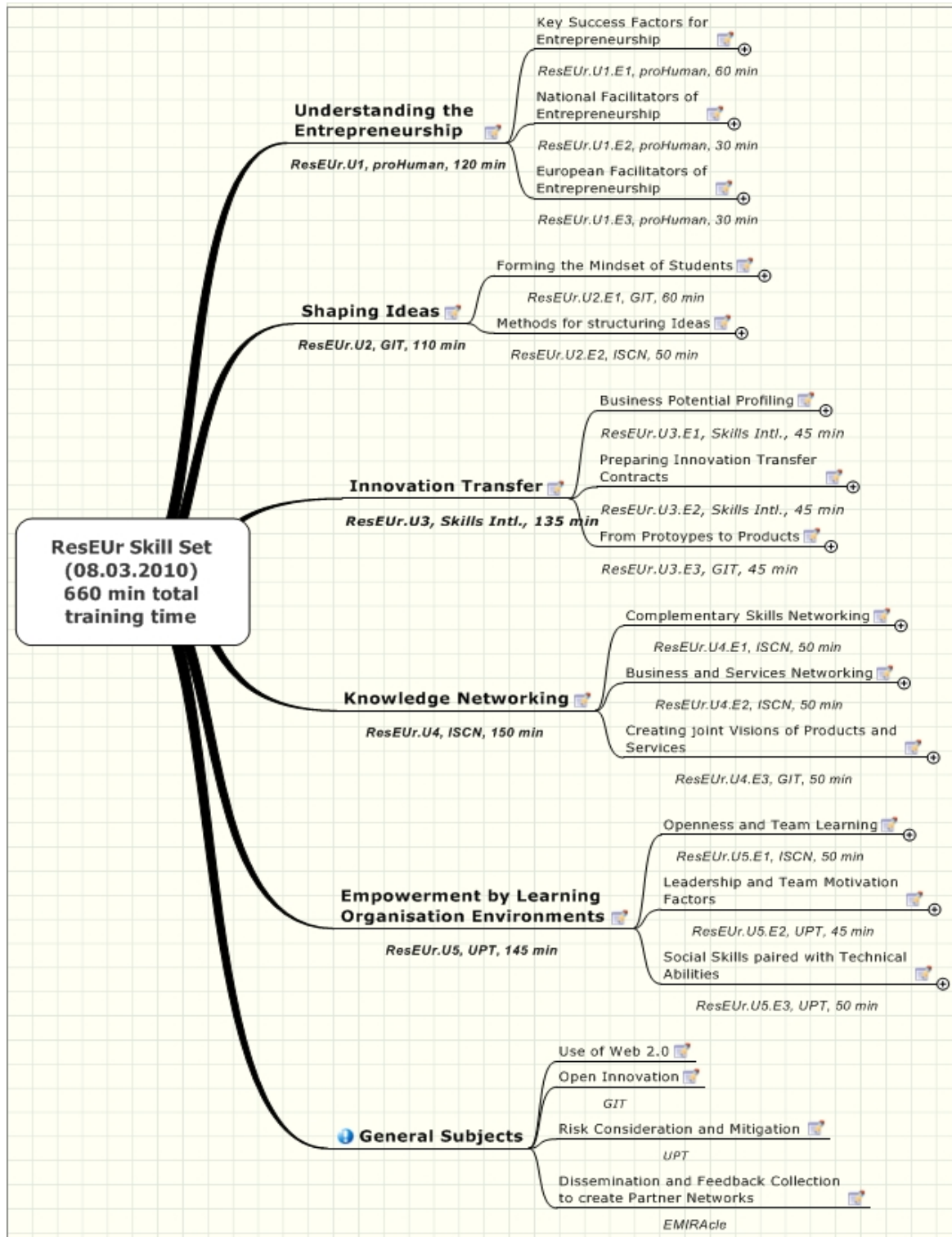


Figure 2. The ResEUr Skill Set Map

As it can be seen in Figure 2, the skill card is represented by a map (using the MindManager software) with the main branches consists of the skill units and the second branches that are the correspondent skill elements. Under each skill unit and element there are indicated: the specific code, the partner acronym that will develop the correspondent training material, and the estimated duration of the training. The third braches are allocated to the performance criteria of each element (that are in direct relation with the questions that shall be settled for the examination process related to the

certification of the job role). This representation of the skill card allowed an optimal visualization of the whole developed work (in different project stages) and also, the harmonization and integration of the partners for attending the project objectives. The skill set map was a good tool of communication between the partners and the IT specialists involved in the project, too.

2.3. Brief characterization of the skill units

In the following there shall briefly described the content of each skill unit defined in the ResEUr project. **Understanding the Entrepreneurship** unit provides highly condensed and concise information about key issues of entrepreneurship, which are typically taught in seminars which are currently offered by various institutions. The unit, however, does not want to replace such seminars and courses, but it rather seeks to give the student a convenient means of reflexion on whether she/he needs formation in the respective competence areas, and where she/he can find complementary courses. The unit consists of the following elements: key success factors for entrepreneurship; national facilitators of entrepreneurship; European facilitators of entrepreneurship. This unit will be developed with the contribution of all partners because of the specificity of the entrepreneurship support at the national level. **Shaping Ideas** unit deals with key skills that are required to leverage brilliant ideas, starting from creating an innovative mindset in students' heads, passing via methods for structuring ideas, and ending by discussing methods and best practices for presenting ideas. The unit consists of the following elements: forming the mindset of students; methods for structuring ideas. **Innovation Transfer** unit focuses on issues concerned with the transfer of innovation from the academic environment to the competitive market. These issues are known to represent key success factors of entrepreneurship in the academic domain. The unit consists of the following elements: business potential profiling; preparing innovation transfer contracts; from prototypes to products. In the ResEUr qualification, **Knowledge Networking** is considered the core competence area for entrepreneurs. Networking knowledge from several different domains and sectors can create the decisive competitive advantage of modern and future-oriented enterprises. The unit highlights several significant factors of this networking paradigm with special relevance for enterprise creators in the academic domain. The unit consists of the following elements: complementary skills networking; business and services networking; creating joint visions of products and services. **Empowerment by Learning Organization Environments** unit puts the concept of the Learning Organization in the middle of the successful enterprise creation and of an entrepreneurial behavior. In this context the skill elements are: openness and team learning; leadership and team motivation factors; social skills paired with technical abilities. **General Subjects** skill unit is dedicated to some specific subjects (skill elements definition) as: use of Web 2.0; open innovation; risk consideration and mitigation.

With this brief overview about the skills units and the correspondent skill elements we have define the training materials domains. Also, the performance criteria associated with each skill element shows the content of the training materials. Taking into consideration the suggested structure of the skill card it is easy to imagine the structure of the e-learning platform.

3. CONCLUSIONS

The paper presents some important aspects regarding the entrepreneurship skills development (qualification) and certification and a possible, feasible solution for this problem at the European level. In the introduction there have been underlined the importance and the need of the entrepreneurship training in Europe, using relevant

references. In the second chapter, there have been described the preliminary researches (in the context of a lifelong learning program) for the Research-Entrepreneur skill card definition in detail (skill units, elements and performance criteria) that will be used for the training materials development. The described approach is a classical one for skill set provision on the ECQA platform.

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