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FUNDAMENTAL VIEW OF THE OUTCOMES OF ENTREPRENEURSHIP EDUCATION

Inna Kozlinska

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Fundamental View of the Outcomes of Entrepreneurship Education

Inna Kozlinska[1]

Abstract

The research paper presents a holistic framework of the outcomes of entrepreneurship education (EE) at educational and socio-economic levels. Employing the general scientific research methods, monograph and logical construction, the author investigates the fundamental origins of the European Competence Framework for entrepreneurial learning and identifies a scientific justification for its implementation. This work is also the first to exploit an integral view of entrepreneurship as a combination of employability, intrapreneurship and venture creation – for measuring the impact of entrepreneurship education, and to set linkages between learning outcomes in real life and educational settings. The target audiences for this paper include entrepreneurship educators, researchers and EE decision-makers.

JEL Classification: I21, I25, M13, M53

Keywords: entrepreneurship education, training/learning outcomes, European Competence Framework, intrapreneurship, fundamental research.

[1] Inna Kozlinska (inna.kozlinska@ut.ee) is a project researcher in the Centre for Entrepreneurship, Faculty of Economics and Business Administration, University of Tartu, Estonia; (inna.kozlinska@ba.lv) and PhD student in BA School of Business and Finance, Riga, Latvia.
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1. INTRODUCTION

By far, the majority of researchers, practitioners and policy makers admit that entrepreneurship education (EE) produces measurable outcomes (Charney & Libecap, 2008; EC, 2012a; Harrison & Leitch, 2008; Martinez et al., 2010; Müller & Diensberg, 2011; OECD, 2009), which vary across countries and institutions, study programmes and participants (Fayolle, 2007; Fayolle & Klandt, 2006; Fayolle & Kyrö, 2008; Kyrö & Carrier, 2005; OECD, 2009). In practice, formulations can be divided into two groups or levels: educational and socio-economic.

Educational or learning outcomes are scattered throughout the European Competence Framework (hereinafter – "ECF"), which puts forward knowledge, attitude and skills as learning outcomes (EC, 2004; EC, 2012a; EC, 2012b; ECOTEC, 2010; EU, 2006; Heder et al., 2011), as well as similar "triadic concepts". EE outcomes can also be grouped by learning types: cognitive, affective and skill-based, business-specific and interpersonal (Fisher et al., 2008; in Harrison & Leitch, 2008); other views consider: behaviours, attributes and skills (Gibb, 2005); knowledge, skills, behaviour (Heinonen & Poikkijoki, 2006); attitudes, capabilities and skills (Hytti, 2002), to mention a few.

Some sources refer to the "impact" and/or "effect" and broaden our understanding of EE outcomes from the purely educational to the socio-economic level, entailing *employability*, *intrapreneurship* and *new venture creation* (Blenker et al., 2006; Bridge et al., 2010; EC, 2012a; Martinez et al., 2010; OECD, 2009). In effect, these are real-life outcomes pursuing the ultimate aim of higher education – preparing students for an economically viable working life (Gibb et al., 2009). Still, a number of variations using these terms can be found in the thematic literature; for instance, the "impact of training on entrepreneurial outcomes" (Matlay, 2008), the "impact of EE" (Charney & Libecap, 2008), meaning the measurable influence of EE. This article relies on the sources that use the terms "impact" and/or "effect" in relation to the socio-economic aspect and treats them synonymously with "outcomes".

However, the learning outcomes of EE remain largely detached from real-life outcomes, and the interrelations among these have not been researched extensively. As entrepreneurship itself is a result of many influences, different views on EE outcomes exist, and therefore, a single model cannot meet the requirements of a wide stakeholder group. Along with the need for understanding paradigms and models of learning and teaching entrepreneurship (Béchard & Grégoire, 2005; Kyrö, 2005; in Kyrö & Carrier), there is a need to establish a systemic view of EE outcomes, since, in line with the continental approach to education (Fayolle & Kyrö, 2008), models and paradigms precede actions (Choi, 1993).

This research paper presents a holistic framework of the outcomes of EE at both educational and socio-economic levels (Mets, 2006) for application in further empirical studies within a related doctoral project – formulating hypotheses based on inter-linkages among the outcomes, elaborating a questionnaire and measuring the results. The paper employs general scientific research *methods* – logical construction, and monographic and graphic tools. The main *research tasks* are:

- to investigate the scientific origins of the ECF for entrepreneurial learning and identify a scientific justification for its existence/implementation

- to compare the ECF with other views of EE outcomes, and evaluate them from the perspective of the latest developments in entrepreneurship research (including those in psychology and education)
- to integrate the socio-economic and learning outcomes of EE.

First of all, when determining the learning outcomes of EE, we have to distinguish between the learning outcomes of general education and EE, as well as justify bringing models from education and psychology to EE (i.e. general training outcomes described by Kraiger et al. (1993) reflected in Fisher et al. (2008) or Snow & Jackson's (1997) constructs transferred to EE by Rouhotie & Koiranen (2000; cited in Kyrö, 2008)) – to what extent they are relevant and what entrepreneurship-specific elements are considered. Secondly, it is necessary to align the objectives and outcomes, since the aims[2] of EE programmes and the means for achieving them determine the outcomes being sought (Gibb, 2005; OECD, 2009). Thirdly, once fundamental arguments for existing views have been found, the assertion is that the socio-economic and learning outcomes will be interconnected, but real life truly differentiates EE from other disciplines in higher education.

The following section provides insights into writing the ECF-based learning outcomes in general education and attempts to explain why the ECF is broadly used in EE. In addition, it contains a discussion of alternative approaches to outcomes at the educational level, and some aspects of aligning the teaching modes, aims and outcomes of EE. As a result, the next section introduces the first part of the target framework that addresses the learning outcomes of EE. The third section focuses on the socio-economic outcomes of EE, and offers arguments for a broader view of entrepreneurship, beyond the common idea of "venture creation", to bring in core measures of EE for the second part of the framework this paper introduces. The final section, preceding the conclusion, combines and expands the results of the analytical overview from the previous sections to construct the holistic framework of EE outcomes.

2. FIRST PART OF THE FRAMEWORK: LEARNING OUTCOMES OF EE

2.1 ECF approach to writing learning outcomes

The European Competence Framework (ECF), as a key competence-based approach to learning outcomes, is widely accepted in Europe (especially, for higher education and lifelong learning) – it is used in reports and documents for the European Commission (EC, 2012a,b; EC, 2007; EU, 2006, etc.), in research by European organisations; for example, the South-East European Centre for Entrepreneurial Learning (Heder et al., 2011), the Stationery Office of the UK (Davies, 2002) and in publications and works by individual authors (Gibb, 1993; Matlay, 2008; Mets, 2010). In order to go into the details of the application of the ECF in EE, it is necessary to first answer some questions that relate to general education: what are competences and what is the theoretical foundation of the ECF.

[2] In this paper, "aims" are synonymous with "objectives" and "goals".

Within the ECF, competences are the combination of knowledge, skills and attitudes, and at the same time, learning outcomes (e.g., EU, 2006; Heder et al., 2011), but this is not the only accepted interpretation, even among official European sources. For example, the European Qualifications Framework (EQF) interprets "competences" in a more narrow sense and sets them together with knowledge and skills jointly referred to as "learning outcomes" – what a learner knows, understands and is able to do on completion of a study process (EU, 2008; Grün et al., 2009; Helgoy & Homme, 2011). In contrast, a broader meaning based on Hannula and Pajari-Stylman (2008) incorporates action management, especially, social interaction, flexibility, coping with uncertainty and a willingness to change. This leads to the issue of constituents, since, for instance, the ability to interact socially is a skill, and the willingness to change is an attitude. In case the ECF allows classification of diverse educational outcomes into its three major categories, then there should be no conflicting arguments in defining competences, with an exception for hybrid outcomes, such as creativity, which can represent both a skill and an attitude.

Irrespective of the fact that both the ECF and EQF are purely educational frameworks (i.e. they carry a broad meaning and can be applied to any study programme), only the former is widely used in EE. Why is that? Up until now, practically no other source, apart from Fisher et al. (in Harrison & Leitch, 2008), supplied, or even attempted to supply, enough theoretical reasoning for the application of the ECF in EE. This paper will reveal the theoretical foundation of this framework dating back to the 1950s.

A retrospective analysis of literature sources revealed that the ECF has fundamental grounds in the Taxonomy of Educational Objectives. Originated by the American educational psychologist Benjamin Bloom (1956), its current version consists of three domains of learning: cognitive (dealing with knowledge, comprehension and critical thinking), affective (concerning attitudes, emotions and feelings) and psycho-motor (focusing on change/development in behaviour/skills) (Churches, 2008; Kennedy et al., 2006; Krathwohl, 2002). All three domains are hierarchical, where the essentials exist at earlier levels, and each level assumes mastery at lower levels. For example, cognitive outcomes evolve from knowledge (the ability to recall or remember facts) to evaluation (the ability to judge the value of material). The taxonomy also features an ascending order of complexity within the outcomes components.

In the 1950s cognitive learning paradigm, where the idea of knowledge served as an epistemological basis with no relation to the environment, was still relevant (Kyrö, 2005). Notwithstanding the constructivist paradigm brought into play during the postmodern transition in the 1970s, Kraiger et al. offered three-dimensional constructs for general education and training in 1993, featuring many similarities with Bloom's Taxonomy, in effect being derived from it. However, Kraiger et al. (1993) suggest a slightly different order, still starting the ladder from cognitive, proceeding to skills-based (or psycho-motor) and ending with affective outcomes. Otherwise, every dimension replicates Bloom's Taxonomy very closely in terms of content, mentioning abilities, values, behaviour and skills (e.g. naturalisation vs. automaticity, characterisation vs. motivational disposition, etc.). Table 1 shows the composition of these learning outcomes.

It is quite evident that those constituents of general educational outcomes in Table 1 (except "imitation") focus on the individual isolated from other people and mainly his/her cognitive, analytical abilities, which is natural for a supply teaching model in higher education (Béchard &

Grégoire, 2005). Even in skills-based outcomes, Kraiger et al. (1993) mentions procedural knowledge, and both sources tend to highlight precision and accuracy – in a sense, error-avoidance.

Table 1. General education and training outcomes featuring an ascending order of complexity

B. Bloom (1956)		**K. Kraiger (1993)**	
1. **Cognitive** outcome		1. **Cognitive** outcomes	
Knowledge	The ability to recall or remember facts without necessarily understanding them.	**Declarative knowledge**	Information about what: verbally-based, task-relevant knowledge.
Comprehension	The ability to understand and interpret learned information.	**Mental models**	Cognitive maps developed by trainees to organise and integrate received knowledge.
Application	The ability to use learned material in new situations	**Meta-cognitive skills, self-insight**	Knowledge of one's own cognition: planning, monitoring and revising goal-appropriate behaviour; self-regulation, self-control and self-assessment.
Analysis	The ability to break down information into its components.		
Synthesis	The ability to put parts together.		
Evaluation	The ability to judge the value of material for a given purpose.		
2. **Affective** outcomes		2. **Skill-based** outcomes	
Receiving	A willingness to receive information.	**Composition**	Mental grouping of steps by linking earlier learned procedures into a more complex production.
Responding	Active participating in own learning.		
Valuing	Acceptance and commitment to chosen values.	**Proceduralisation**	Building discrete behaviour into a routine; procedural knowledge.
Organisation	Refers to the process that individuals go through as they bring together different values.	**Automatic processing, tuning**	A shift from controlled to automatic processing; enables task accomplishment without verbalisation; improved accuracy, generalised applicability.
Characterisation	The individual has a value system in terms of beliefs, ideas and attitudes that control behaviour in a consistent manner.		
3. **Psycho-motor** outcomes		3. **Affective** outcomes	
Imitation	Observing the behaviour of another person and copying this behaviour.	**Targeted object, attitude strength**	Organisational commitment, creative individualism, tolerance of diversity, inner growth, self-awareness, changing values, behavioural modelling.
Manipulation	Ability to perform certain actions by following instructions and practicing skills.		
Precision	The ability to carry out a task with few errors.	**Motivational disposition, self-efficacy, goal setting**	Mastery and performance orientation, perception of own capabilities to perform endeavours; motivated behaviour, expertise.
Articulation	Ability to co-ordinate a series of actions by combining two or more skills.		
Naturalisation	A high level of performance naturally ("without thinking").		

Sources: Kennedy et al. (2006); Kraiger et al. (1993)

However, if we think of an individual as a purely social being, mistakes are very natural and part of his/her learning process. A willingness to receive information might not appear at all in the context of emotional discouragement from the constant transmission and memorising of information. On the contrary, when placed in a context necessitating interaction with the external environment, the individual obtains affective knowledge, which is easier to memorise and reproduce; authentic social settings imply the development of social competences especially relevant for EE. For this reason the composition of the learning outcomes in Table 1 are rather out-dated not only for EE, but also for general education. The question remains, whether the general structure of the ECF can be used in EE – is the application of this framework justified?

2.2 ECF-based learning outcomes of EE

The authors and sources that deal with EE and research particularly represent two groups: those following the ECF and those using other frameworks or schemes of learning outcomes for EE. This subsection sheds light on the ECF-based learning outcomes of EE.

Along with the shift in the learning paradigm towards constructivism, teaching in higher education also developed towards competence-based approaches, broadening within EE to meet real-life demands (Béchard & Grégoire, 2005; Braun, 2011). Within the European Framework for Key Competences for Lifelong Learning (EC, 2007; EU, 2006), entrepreneurship is defined as one of eight basic competences (together with mathematical, linguistic, digital and others) and the foundation for all developments required to contribute to social or commercial activity, where *the basis for entrepreneurship lies in educational sciences and theories*. Hence, it is not surprising that in order to define the learning outcomes, the model from education was also adopted in entrepreneurship programmes, being the most influential channel for making a societal change. Still, proof of its applicability lies in components of entrepreneurship-specific outcomes coupled with empirical factors that are no less relevant.

The European Commission has recently published results of an empirical study, where researchers assessed every EE learning outcome, measuring its constituents (as per Table 2) and found that EE had a positive impact on the key competences of individuals (EC, 2012a:8). In fact, the study proved that the ECF matches entrepreneurial key competence[3] education (Braun, 2011). The ECOTEC report "Towards Greater Cooperation and Coherence in EE" (2010:10) refers to knowledge, skills and attitudes as "the desired outcomes of EE". Generally, attitudes refers to taking responsibility for one's own learning and career (i.e. the set of skills needed to turn ideas into actions and knowledge), and having a broad understanding and knowledge of entrepreneurship including the role entrepreneurs play in modern economies and societies (ibid, 2010).

The overview shows that interpretations of ECF-related learning outcomes within EE differ (see Table 2). Once again, the issue of prioritisation emerges. For instance, the EC (2012a) prioritises outcomes starting from attitudes to skills and knowledge, while EC (2012b) – from knowledge to skills and attitudes. Heder et al. (2011) and Fisher et al. (2008), in turn, use the same order as in the ECF for general education, or as in Kraiger et al. (1993), from knowledge to skills and attitudes. In these cases, the learning outcomes are hierarchical; similar to the earlier constructs of learning outcomes in general education. There is no clear theoretical explanation, however, for why motivation is a part of "skills" in EC (2012a), while in EC (2012b) and ECOTEC (2010) it is

[3] A composition of an entrepreneurial attitude, skills and knowledge of entrepreneurship (EC, 2012a).

an attitudinal component; the position of "creativity" likewise differs; we can also regard "opportunity recognition" as the "skills" component, and "commitment" as "attitude".

Table 2. Constituents of the ECF

	1. Attitude	2. Skills	3. Knowledge
EC (2012a)	Risk propensity Need for achievement Self-efficacy Structural behaviour	Creativity Analysis Motivation Networking Adaptability	Understanding of entrepreneurship theory and the phenomenon per se
	1. Knowledge	**2. Skills**	**3. Attitudes**
EC (2012b) & ECOTEC (2010)	Opportunity recognition Understanding the broad picture and context of work life and economy Understanding of business start-ups and procedures Innovation and creativity processes Entrepreneurial process Ethics of enterprises	Planning Organisation Management Leadership Team and individual work Negotiation Risk-taking Lateral thinking Commitment	Independence and innovation Social confidence Motivation Determination to meet objectives Creativity and imagination Curiosity Ambition and drive Initiative Tolerance to failure Self-belief

The most important elements in the new composition shown in Table 2 are the presence of such constituents as "team work", "negotiation", "lateral thinking", "creativity", "ethics" and so on, as well as a number of affective aspects (like "tolerance of failure" and "social confidence"), crucial in effect in the life of any individual, not only entrepreneurs. These constituents evidently form a different meaning here than in Bloom's original Taxonomy.

Fisher et al. (2008) provide another solid example based on over 25 prominent experts in entrepreneurship research and EE that supports ECF (e.g. Baron, 2000; Baron & Locke, 2003; Gibb, 1993; Garavan & O'Cinneide, 1994; Timmons, 1995; Rae, 2000; etc.), although the three-dimensional approach is anchored in Kraiger et al. (1993). This time, the social element is not transparent in the "affective" outcomes, though it appears in the "skills-based" outcomes. As Table 3 shows, the outcomes are divided into business-specific (related to business concepts and actions) and interpersonal (social, psychological) aspects. This classification envisages more skill-based components to measure than outlined in Table 2. Indeed, commenting on the prioritisation of domains, the authors admit that "the framework's explicit recognition of cognitive learning may provide a necessary counterweight to the emphasis on skill-based learning of entrepreneurs" (Fisher et al., 2008:319). However, since the adaptation of Bloom's Taxonomy, it is the cognitive aspect that has been overemphasised as fundamental. Once again the attitudinal component remains rather underestimated, although Fisher et al. also provide empirical evidence for this approach.

Given the competence-based model in contemporary education and the justified applicability of the ECF in EE, it is more important to propose developing and measuring those constituents, which are inherent to enterprising and entrepreneurial personalities. Once they repeat or open

different angles in various entrepreneurship (and EE) research sources, we can select or omit particular constituents for further measurement purposes.

Table 3. EE learning outcomes according to Fisher et al. (2008)

	Business-specific content	***Interpersonal content***
Cognitive	Basics of accounting, finance, technology, marketing Knowledge of how to get things done without resources Understanding risk	Knowledge of personal fit with entrepreneurship career
Skill-based	Conducting market research, assessing the marketplace Marketing products and services Recognising and acting on business opportunities Creating a business plan, incl. financials Obtaining financing Developing a strategy Identifying strategic partners Risk management	Persuasion, getting people excited about your ideas Listening Setting priorities and focusing on goals Defining and communicating the vision Leadership, motivating others Active learning Dealing with customers Managing people Resolving conflict Adapting to new situations, coping with uncertainty
Affective	Entrepreneurial spirit Passion for entrepreneurship Self-efficacy for entrepreneurship Commitment to business venture	Self-confidence, self-esteem Need for achievement, motivation to excel

Source: Fisher et al. (2008)

In addition to the ECF-based approaches there are other prominent views of the learning outcomes in EE (e.g. Alan Gibb and Paula Kyrö). One more relevant topic in this discussion is teaching aims in entrepreneurship pedagogy and how they relate to the learning outcomes.

2.3 Other views of learning outcomes in EE and their alignment with teaching aims

Despite the ECF being widespread, no universally accepted approach to writing learning outcomes for EE exists even in entrepreneurship research. Moreover, not only do developments in education and entrepreneurship influence approaches to EE learning outcomes, but so do developments in the field of psychology. This subsection highlights alternatives to the ECF that offer relevant comparisons and draw out implications for the target framework. Furthermore, this necessitates the discussion of matching learning outcomes with modes of teaching and the aims of entrepreneurship study programmes, which has a direct influence on the concluding arguments in this article.

In the latest call for proposals in EE, the European Commission (EC, 2012b) elaborates the approach to writing learning outcomes from Heinonen and Poikkijoki (2006), who state that the objectives of the EE programme are "to increase understanding and knowledge of entrepreneurship, thus, infusing entrepreneurial skills and behaviour" (p.81) for the entrepreneurial process, which can be attributed to outcomes for the purposes of this discussion. However, an investigation of this approach uncovered that behaviours, skills and attributes were

transformed into attitudes, skills and knowledge, and the subsequent entrepreneurial process and behaviour in the EC's sources (2012a; 2012b).

Gibb (2005), in turn, sets the triadic variation of behaviours, attributes and skills as EE outcomes too. Table 4 demonstrates that the constituents mostly coincide with the ECF, though less its cognitive dimension. "Attributes" here resemble "attitudes", and "behaviours" – "skills" in the ECF. The presence of creativity is apparent in every outcome: "creative problem solving" in "skills", "creativity" as an attribute; "putting things together creatively" and "solving problems creatively", but in "behaviours". Since the beginning of the 19th century, when J.-B. Say (1803) coined the term "entrepreneur", he also emphasised vital and creative roles of entrepreneurs in the economy. A century later, J. Schumpeter (1934) connected the term closely with innovation and creative destruction. Most probably, Gibb, the bright representative of entrepreneurship research, avoids the cognitive aspect on purpose as overemphasised in other sources, and underlines the intrinsic components, such as creativity, independence/autonomy, intuition, etc. What is also important, he underlines "preference for learning-by-doing" as a typically entrepreneurial attribute.

Table 4. EE learning outcomes according to Gibb (2005)

Behaviours	• opportunity seeking and grasping • taking the initiative to make things happen • *solving problems creatively* • managing autonomously • taking responsibility for/ownership of things	• seeing things through • networking effectively to manage interdependence • *putting things together creatively* • using judgment to take calculated risks
Attributes	- achievement orientation and ambition - self-confidence and self-belief - perseverance - high internal locus of control (autonomy)	- action orientation - preference for learning-by-doing - hard-working - determination - *creativity*
Skills	➢ *creative problem solving* ➢ persuading ➢ negotiating ➢ selling ➢ proposing	➢ holistically managing business/ projects/situations ➢ strategic thinking ➢ intuitive decision-making in the context of uncertainty ➢ networking

Source: Gibb (2005)

Apart from strong educational input, EE outcomes are seriously affected by psychological influences (especially Social Cognitive Theory and Behaviourism) that are indeed very natural in any attempt to decode entrepreneurial personalities, their motivation, behaviour, self-esteem etc. These influences are particularly salient in the theoretical framework for teaching and learning entrepreneurship introduced by Kyrö (2008) based on Rouhotie and Koiranen's (2000) Personality and Intelligence Constructs (PIC), which is particularly relevant to the current discussion. The framework also suggests three constructs or domains emerging in the process of the interaction between personality and intelligence, which differ slightly from the ECF – affection (temperament and emotions, incl. attitudes), conation (volition and motivation, incl. self-efficacy) and cognition (declarative and procedural knowledge, incl. skills), where affection is the basis of further developments. From this viewpoint, the ECF lacks the conative construct,

since motivation, need for achievement, behaviour and self-efficacy cannot be attributed to the attitudinal component, and attitudes belong to affection.

However, there are a number of comments to make. Firstly, Gibb (2011:155) views self-efficacy based on Bandura's theory (1977) as an "emphasis on self-action, role model coding leading to attitude development". Self-efficacy is defined as the conviction that one can successfully execute the behaviour required to produce outcomes (Bandura, 1994). Ajzen's Theory of Planned Behaviour (1985), in turn, states that attitudes form behaviours through entrepreneurial intentions as predictors of the latter (Fayolle et al., 2006). Hence, attitude as part of affection in the PIC does not necessarily precede self-efficacy; or, along with entrepreneurial behaviour and intentions, self-efficacy can be attributed to attitudes in the ECF. Secondly, affection, conation and cognition are known in psychology as the three parts of the human mind (Hilgard, 1980), where conation "seems to include aspects of both "personality" and "intelligence", but these concepts are "cloudy, too molar and vague" (Snow and Jackson, 1997:3). Therefore, the PIC and ECF do not contradict each other, and the most crucial implication from the PIC framework is its consistency with the constructivist learning paradigm as it starts with an affective/attitudinal component.

Gibb (2005) stresses the importance of aligning the aims of EE programmes with the outcomes sought. From first sight, the common feature of the existing frameworks is a widespread admittance of the general aims of EE and corresponding teaching modes. Table 5 illustrates these aims: teach/learn to understand entrepreneurship, to become entrepreneurial, and teach/learn to become an entrepreneur – aligned with the teaching modes – education about, through and for entrepreneurship.

Table 5. Core aims of EE aligned with teaching modes and learning outcomes

Aim	*Explanation*	*Mode*	*Explicit learning outcome*
To understand entrepreneurship	The study of entrepreneurship as a phenomenon and academic subject	ABOUT	Knowledge
To become entrepreneurial/ enterprising	Focusing on the entrepreneurial process: enterprising/entrepreneurial individuals discovering, evaluating and exploiting opportunities	THROUGH	Attitude, "enterprising" skills
To become an entrepreneur	The knowledge base and the skills needed to start, develop and grow businesses	FOR	"Entrepreneurial" skills

Sources: Blenker et al. (2006); EU (2006); Gibb (2005); Heinonen & Poikkijoki (2006); Hytti et al. (2010; 2004)

According to Hytti et al. (2010), the first aim and mode (about) emphasises the study of entrepreneurship as a phenomenon and academic subject, which actually matches the "knowledge" outcome in the ECF. The second aim and mode (through) implies a process approach to EE, where entrepreneurial and innovative individuals discover, evaluate and exploit opportunities, develop *enterprising* skills, and this coincides with the "attitude" outcome and "skills" in the meaning of a general readiness for entrepreneurship. The third goal (for) emphasises both the knowledge base and *entrepreneurial* skills needed to start, develop and grow businesses. However, one can hardly find a study programme that sets only the first aim – it is rather a combination of two–three aims. Thus, Table 5 emphasises the explicit, or salient, learning outcomes of the given aim-mode combinations.

This subsection has shown how alternative views of the outcomes of EE grounded in entrepreneurship research (A.Gibb) and psychology (P. Kyrö) differ from the education-grounded ECF. This analysis underlined the particular importance of the attitudinal or ultimately the behavioural component that can also be freely used in the ECF. As every aim and mode of EE features the corresponding explicit outcome at the educational level, it can be argued that teaching/learning to become enterprising and educating through entrepreneurship should be set at the core of educational practices. The preceding subsection, therefore, provided a fundamental explanation for the use of the ECF in EE, and set the scene for its further application, given some hierarchical refinements.

Despite the theoretical discoveries concerning learning outcomes in general education and EE, they represent only one aspect of the outcomes that EE produces. The next section entirely focuses on the socio-economic outcomes that truly differentiate entrepreneurship from other disciplines in higher education. Moreover, it is further hypothesised that these two groups of EE outcomes are interconnected.

3. SECOND PART OF THE FRAMEWORK: SOCIO-ECONOMIC OUTCOMES OF EE

The results of EE are typically measured on the basis of the number of start-ups generated, which is explicable given the "tangibility" and ease of this measure. Another less tangible but quite popular approach is to measure them in terms of entrepreneurial intentions (Mwasalwiba, 2010). When indicating the outcomes of EE at educational and socio-economic levels respectively, both measures encounter the problem of narrowness. Firstly, on the one hand, intentions to start an enterprise evolve over time, and on the other hand, they do not always result in action. Secondly, as far as EE is concerned, it does not set out to make every student an entrepreneur; therefore, the question is how to measure the impact of EE among students that do not start up enterprises or start them up much later. It has been admitted that along with a broader view of the objectives of EE, the rate of new venture creation is not the only indicator for evaluating the results of entrepreneurship programmes (Kozlinska, 2011), especially if a longitudinal study is not feasible to accomplish. This section suggests two further important indicators to take into account in the socio-economic part of the holistic framework.

Gibb (1996) states that there are three reasons for contemporary interest in entrepreneurship and the education of new entrepreneurs: job creation and economic development, strategic adjustment/realignment and deregulation of public utilities and state-owned enterprises. According to Kirby (2006), competences developed as a result of EE should lead to self-employment, economic self-sufficiency or employment generation, business survival or growth. Moreover, entrepreneurship is an economic process that also organises social processes, but at present society has to rely upon itself and develop a greater sense of enterprise and self-help (Fayolle & Klandt, 2006), where the challenge is to develop entrepreneurial personalities going beyond the commercial and apart from pure venture creation (Hytti, 2008; Kirby, 2006). This position accords with the European socio-economic goals of EE programmes – to enhance the attractiveness of graduates for employers, improve their role in society and economy and encourage innovative business start-ups (EC, 2012a).

Based on Blenker et al. (2006), Braun (2011), Bridge et al. (2010), EC (2012a), Kirby (2006), OECD (2009), OFEM (2008) and Martinez et al. (2010), employability and intrapreneurship are distinguished as the main socio-economic outcomes of EE in addition to the common venture creation.

Employability means being prepared to work for other people, equipped to obtain existing jobs – by "selling" oneself to employers and by making progress over time (Bridge et al., 2010). The EC (2012a) includes attempts to transit into self-employment in this category. These attempts can be regarded as the highest level of employability, when a person feels ready to employ himself/herself, which is hardly possible without him/her being enterprising. The concept of intrapreneurship was introduced by Pinchot in 1976 and characterises entrepreneurial/enterprising employees that are able to identify and exploit lucrative opportunities within a company (OFEM, 2008). Its tangible form can be a spin-out, the company's new subsidiary or the launch of a new product line – as a result of the implementation of an *entrepreneurial* initiative, which is usually innovation-based, by an employee (ibid, 2008). Given that this is not a regular accomplishment, if we limit ourselves to the "classical" meaning of intrapreneurship (OFEM, 2008), and not all companies might explicitly support spin-outs or innovative activities, an intrapreneur is also someone able to take on leading managerial positions within the company, thus acquiring authority and a certain degree of independence for implementing his or her own ideas and managing other people by behaving in an *enterprising* way (Hytti, 2008; Kirby, 2006) with the difference that he/she takes less risks and, possibly, benefits financially in the long-term compared to an entrepreneur. Finally, new venture creation is commonly tied to the establishment of a new company, whether before or after graduation and its level of innovativeness (ibid, 2010; EC, 2012a).

Employability, intrapreneurship and venture creation can also be regarded as second-level outcomes of EE since they become salient as a result of learning outcomes. Contribution to employment is predicated by understanding what the job requires appropriate knowledge and skills (Bridge et al., 2010). Intrapreneurship is a wider concept of entrepreneurial behaviour, also called "corporate entrepreneurship" or "intra-corporate venturing", closely linked with creativity, innovation, risk-taking, new learning, redistribution of resources and featuring a lot of similarities with "attitude" as a learning outcome (Hytti, 2008; OFEM, 2008). New venture creation assumes concrete entrepreneurial activity backed up by relevant knowledge (most often – business planning), awareness, attitude, intentions and behaviour (Martinez et al., 2010). Whilst attitude, knowledge and skills are the learning outcome categories generally attributable to any discipline in higher education, the combination of employability, intrapreneurship and venture creation is the distinct real-life combination of outcomes from EE specifically. In sum, learning and socio-economic outcomes together result in augmented entrepreneurship, and in more innovative enterprises, increased economic activity and job creation (Blenker et al., 2006).

In line with the OECD (2009) approach, three broad categories of EE programmes can be subsumed: *learning entrepreneurial skills and attitudes*, *enhancing business start-up and entrepreneurial behaviour*, which corresponds to the "through" and "about" teaching modes; the *development of business start-ups and entrepreneurial skills*, or the "for" mode aiming at new business creation. Indeed, the latter may not always be appropriate even for those pre-motivated to start businesses, but this approach clearly omits explicitly using the "about" mode as a separate line of teaching. Nonetheless, the OECD categories correspond with employability and/or

intrapreneurship and venture creation outcomes, while the ability of the "for", "through" or "about" entrepreneurship programmes to elicit positive outcomes is highly dependent on the quality and appropriateness of the programme delivered (OECD, 2009). Therefore, the teaching methods applied might have a direct influence on how well the socio-economic outcomes are achieved. These methods also distinguish one teaching mode from another.

As in the learning outcomes, "real-life" outcomes also consist of numerous components. Table 6 summarises these constituents, which also serve as measures of employability and venture creation. Braun (2011) regards them as the "macro-level effects of entrepreneurship training programmes". Here venture creation is associated with the number of new enterprises, additional taxes and foreign currency generated by start-up companies, survival rates, effects on female entrepreneurship, turnover and profit, level of innovation and so on. Employability covers entering employment, number of creative and innovative positions, job satisfaction, annual income, attempts to transit into self-employment, effects on employment rates and so on, as per the table.

Table 6. Socio-economic outcomes of EE: employability and new venture creation

	Details
Employability	How quickly students can find their first job, whether local or abroad How long they stay in employment How often they change jobs, the number of employment periods How they progress over time
	Self-development Innovative and creative positions Job satisfaction Annual income (capability of getting better paid positions or growing salaries)
	Attempts to transit into self-employment Involvement in self-employment as freelancers or liberal professionals Planning a start-up and the likeliness of starting an enterprise
	Participation in voluntary work Participation in non-commercial work (e.g. charities or hobby clubs)
New venture creation	The number of new enterprises The number of new innovative enterprises Survival and discontinuation rates Start-up before graduation Taxes and foreign currency generated by start-up companies The number of jobs created Annual growth rates in terms of turnover and employees Helping others to start an enterprise Female entrepreneurship
	The number of years between graduation and first enterprise The number of years in business and in current business
	Improved processes Improved goods/services Improved forms of organisation, business structures or practices Ambition for business growth: future business size
	Net annual income Turnover growth

Sources: Blenker et al. (2006), Braun (2011), EC (2012a), Martinez et al. (2010), OECD (2009)

Although study programmes usually undermine intrapreneurship, it is tied to the following results:

- Generation of new revenues owing to the development of new markets, products and activities
- Reduction of costs and improvement of practices, internal processes and the organisation as a whole
- Encouragement of novel behaviour and attitudes of other employees, development of internal culture (OFEM, 2008).

Consistent with Bridge et al. (2010), "enterprise for life" in the project by the Northern Ireland Centre for Entrepreneurship (NICENT) is somewhat similar to intrapreneurship, representing a broader approach to EE, which encourages the development of enterprising competences rather than focusing on business start-ups, and opposing the widespread view of a narrow focus on business creation. NICENT's Enterprise for Life:

- is a foundation for subsequent "enterprise for new venture creation"
- supports subsequent idea spin-out and business creation
- enhances employability through "intrapreneurship"
- is a foundation for social entrepreneurship
- is an essential approach for careers in various areas, where project management, finances, administration and so on, are important
- develops the capacity to respond positively to change.

Therefore, similar sub-measures can be used to express intrapreneurship as a whole, when assessing the impact of EE among students. This wider understanding of intrapreneurship helps focus on certain constituents that can be measured directly upon completion of the EE study programme/course or within the short term.

The real-life outcomes of EE put forward in this section – employability, intrapreneurship and venture creation – comprise a broad range of components. However, in order to use them in further measurements and to create linkages with the learning outcomes in the final framework and model, it is necessary to prioritise them.

In terms of OECD (2009) methodology, the socio-economic outcomes primarily concern the entrepreneurial or enterprising performance of graduates as expressed in firms, employment and private wealth rather than through a measurement of the economic impact – economic growth and poverty reduction. Therefore, to reduce the number of measures to a relevant minimum, the model will not consider such components as "taxes and foreign currency generated", "annual growth rates" and in fact most indicators related to the future success of a start-up. This is due to the fact that most companies undergo a survival period within the first 2 years of existence, and irrespective of the fact that most (90%) start-ups fail (Marmer et al., 2012).

The success measures are viable for use in a longitudinal study, which is not possible to accomplish in a 2-year time frame. For this reason, the model will focus on the performance measurement of EE students, limited to the period from the 1st year in higher education to 2 years after graduation (Bachelor or Master). The proposed linkages between education and real life are new and challenging enough to prove even provided that delimitation. Moreover, the longitudinal research can be carried out at a later stage as an extra replication study. The following section elaborates on the issue of prioritising the outcome components and builds the resulting framework.

4. HOLISTIC FRAMEWORK OF EE OUTCOMES AND DISCUSSION

Since both parts of the target framework – outcomes of EE at educational and socio-economic levels – are introduced, the present task is to integrate the identified categories and the constituents. The selection of constituents should be a careful and critical process, since so many linkages appear at present that it is obligatory to prioritise. This section combines and expands on the results of the analytical overview from previous sections to construct the holistic framework of EE outcomes.

Based on early Gibb (1993), Fisher et al. (2008), Kraiger et al. (1993) and Krathwohl (2002) or Kennedy et al. (2006), the current form of the ECF is theoretically justified using both educational and entrepreneurship-related sources as containing both generic and entrepreneurship-specific components. The generic components are those that come from education theory (as per Table 1) and the entrepreneurship-specific are derived from entrepreneurship research and practice (as per Tables 2–4). Such components as "creativity", "analysis", "motivation" and "planning" are also general but applicable to the business context, while "risk propensity", "managing people" and "opportunity recognition" clearly belong to the entrepreneurship context. Other "triadic concepts" – more recent Gibb (2005), Heinonen and Poikkijoki (2006) – do not contradict the ECF either but their deeper exploration is beyond the core tasks of this paper.

When compared with the PIC having a strong background in psychology, the ECF also proves to be consistent, with slight hierarchical (relating to "attitude") and content (relating to the standardisation of components) refinements. Furthermore, to make direct comparisons between the PIC and the ECF, a common denominator of competences should be used, and both frameworks have to be for teaching/learning or writing outcomes. In their present form, the ECF and PIC are self-sufficient frameworks that can be applied to any discipline, while empirical studies (EC, 2012a; Fisher et al., 2008; Kyrö et al., 2008) verify they can also be used for EE.

What truly differentiates the outcomes in EE from other disciplines in higher education is the socio-economic, or real-life, aspect. Drawing upon Blenker et al. (2006), Braun (2011), Bridge et al. (2010), EC (2012a), Kirby (2006), OECD (2009), OFEM (2008) and Martinez et al. (2010), the assertion is that employability, intrapreneurship and entrepreneurship and the real-life outcomes of EE are inter-linked with education – attitude, knowledge and skills – to form an integrated framework. The research of Rideout (2011) revealed that EE produces measurable outcomes only through mediating mechanisms, such as personal characteristics, networks, self-efficacy and so on. Put another way, learning outcomes condition the achievement of the socio-economic outcomes. Furthermore, socio-economic outcomes provide "hard" evidence that is easier to track and measure (e.g. the number of start-ups or positions in employment) as opposed to "soft" evidence (e.g. changes in attitude) that is difficult to ascribe quantifiable measures for (OECD, 2009). Braun (2011) notices that difficulties may also arise when measuring socio-economic outcomes due to the crowd-out effects of start-up programmes and limited coverage of potential entrepreneurs by these programmes. Nonetheless, the necessity of this "hard" group of outcomes in the target framework becomes even more evident given the subjectivity of the "self-efficacy" measure for "soft" outcomes widely used in EE. Figure 1 visualises the proposed framework.

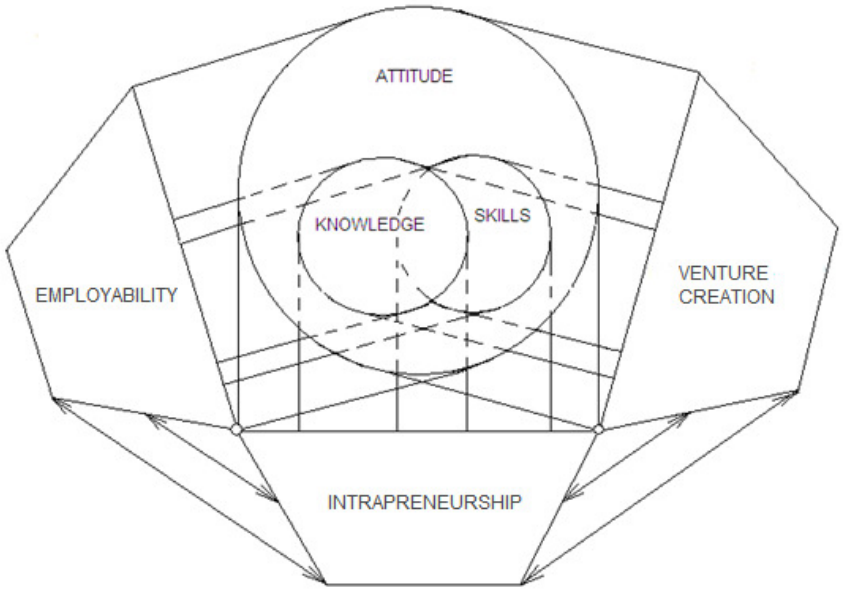

Figure 1. Integrated educational and socio-economic EE outcomes*

The question remains open, which learning outcomes have more influence on the stimulation or production of employability, intrapreneurship and new ventures. Following the logic of Table 5, coupled with the discussion of the prioritisation of teaching aims, modes and socio-economic outcomes in subsection 2.3, one can make the assumption that entrepreneurial attitude has a stronger influence on intrapreneurship than skills on venture creation, and knowledge on employability. It is too early to deny or support this assumption in theory, but apparently employability, intrapreneurship or venture creation requires all three learning outcomes: an entrepreneur, intrapreneur or employee possesses a certain combination of attitude, knowledge and skills, but developed differently. Therefore, the question of the stronger or weaker influence of the learning outcomes on the socio-economic outcomes must be answered empirically, provided that key parameters are selected in both groups.

The subsequent question is what particular constituents of attitude, skills and knowledge might have stronger linkages with the constituents of socio-economic outcomes, and generate those outcomes as a result. While Tables 2–4 list over 20 components per learning outcome in total, some of them clearly overlap (e.g. ambition and drive with initiative), coincide (e.g. achievement orientation and need for achievement) or repeat (e.g. self-efficacy, creativity, networking). Based on Saris and Gallhofer (2007), the fewer variables a model contains, the easier it is to test. The key to Figure 1 (see below) shows the selected learning outcomes components based on EC (2012 a, b), ECOTEC (2010), Fisher et al. (2008) and Gibb (2005), where repetitions are eliminated, and coinciding and overlapping formulations unified. However, it is still possible to limit the number of variables in each outcome.

For instance, innovation as an attitude is disputable once the creative approach to solving problems is included ("solving problems creatively"), and innovative solutions can be seen as a result of creative attitude and thinking. "Self-efficacy for entrepreneurship" implies "self-confidence", "self-esteem" and subsequently "social confidence", while "entrepreneurial spirit" can be perceived as an antecedent to "action orientation", "determination to meet objectives" and

"ambition" – as part of the "need for achievement". In the "knowledge" component, an "understanding of entrepreneurship ethics" and "understanding the broad picture and context of work life and economy" are seen as less important given the presence of the "understanding of entrepreneurship theory and the phenomenon per se". "Marketing, selling and persuasion" incorporate the skill of getting people excited about one's own ideas, whilst "setting priorities and focusing on goals" coupled with "analysis" involve the skill to work independently.

***The key** to Figure 1:

Real-life outcome	
Intrapreneurship	INTR
Employability	EMPL
Venture creation = "true" entrepreneurship	VECR

Learning outcome	*Component*	*Key*
Attitude (9)	Need for achievement, motivation to excel Curiosity, drive, initiative Tolerance of failure and risk propensity Solving problems creatively	INTR, EMPL, VECR
	Entrepreneurial spirit Self-efficacy for entrepreneurship	INTR, VECR
	Passion for entrepreneurship Independence Commitment to business venture	VECR
Knowledge (8)	Basics of accounting, finance, IT, marketing, business planning Opportunity recognition (in everyday life) Understanding entrepreneurship theory and the phenomenon per se Understanding business start-ups and knowledge of procedures	EMPL, INTR, VECR
	Understanding of entrepreneurship and creativity processes Knowledge (and insight) of how to get things done given limited resources Understanding risk (of starting-up)	INTR, VECR
	Knowledge of personal fit with entrepreneurship career	VECR
Skills (14)	Teamwork, working with people (incl. conflict resolution, networking and negotiation) Setting priorities and focusing on goals Market research and analysis Marketing and selling, persuasion Active and on-going learning Adaptability to new and uncertain situations Creative problem solving	EMPL, INTR, VECR
	Organisation and control (of projects, internal processes) Leadership, managing people Creativity, imagination, lateral thinking Opportunity recognition (for innovation/starting-up) Intuitive decision-making in conditions of uncertainty	INTR, VECR
	Business planning, incl. strategy and vision development, identification of strategic partners, attracting financing, etc. Risk management and risk-taking	VECR

Source: based on EC (2012 a, b) and ECOTEC (2010), Fisher et al. (2008) and Gibb (2005)

The key to Figure 1 also discloses which components of the learning outcomes might generate concrete real-life outcomes. In most of cases, it is rather hard to theoretically elicit components that provide projections to a single outcome. Each particular component carries different exposures for an employee, intrapreneur or entrepreneur, although it might generate all three real-life outcomes. As an example, networking and negotiation skills are certainly vital in any self- or paid- employment, but an entrepreneur presumably has developed these skills better than an employee. However, there are some components that are clearly attributable to entrepreneurs, equally projecting to the "venture creation" real-life outcome – "passion for entrepreneurship", "commitment to business venture", "knowledge of personal fit with entrepreneurship career" and "risk-taking".

One more vital aspect pertaining to Figure 1 is the relationship between intrapreneurship, employability and new venture creation. In casual employment, the transition towards intrapreneurship or self-employment is tied to enterprising behaviour. It can be an example of an enterprising personality, who has not found a good fit with a company he/she worked for as an intrapreneur, or is naturally inclined towards working on his/her own, which provides a way to transit from self-employment to a company founder in the future by attracting other people to his/her initiated project. Therefore, Figure 1 emphasises the links between employability and venture creation through intrapreneurship, when the latter means an enterprising personality and the ability to take on managerial positions. Put simply, an ordinary employee cannot become an entrepreneur unless he/she possesses or develops/acquires enterprising and entrepreneurial attitudes and skills. Simultaneously, this scheme does not oblige "inborn" entrepreneurs to go through employment and intrapreneurship before setting up their own companies, or intrapreneurs to go through ordinary employment either; it does, however, cover failure cases, when a start-up is not successful and an entrepreneur transits (back) to intrapreneurship or employment.

To elaborate on the selection of the components for measuring real-life outcomes, we should refer back to the conclusion of section 3, which, from the range of socio-economic components, suggested selecting those that concern specifically the entrepreneurial or enterprising performance of graduates in the period from the 1st year in higher education to 2 years after graduation (Bachelor or Master), but omitting the success measures for their start-ups. Table 7 shows the resulting measures selected. Employability is expressed in how fast students/graduates find jobs, how long they stay in contract and how satisfied they are with the jobs in the period studied. Intrapreneurship measures cover managerial positions that the students/graduates undertake, new initiative implementation within the company, and, in line with the "classical" meaning of the concept, the number of company subsidiaries and spin-outs created, which will most probably be rather low. Finally, venture creation focuses on the number of new companies followed by the level of innovativeness, size of the companies, first revenues/losses and so on, as per the table.

By diversifying the composition of study programmes, universities can satisfy the different aims of EE, as entrepreneurship per se is clearly not suitable for all students. At the same time, EE prepares graduates for a professional life, no matter whether in their own enterprise or in self- or paid employment. Thus, "enterprise for life" or intrapreneurship becomes the central most important outcome as being broader and relevant for most students, enhancing employability and providing the foundation for new venture creation (Bridge et al., 2010).

Table 7. Components of the socio-economic outcomes selected

Real-life outcome	*Component*
Employability	Speed of entering into an employment contract Number of employers and employment periods Change and/or growth in undertaken positions Annual income Job satisfaction Self-employment (also – attempts to transit and freelancing) Plans to start own company
Intrapreneurship	Company spin-outs and subsidiaries New initiative implementation with managerial support New company profits/reduction of costs Managerial positions undertaken
Venture creation	Number of new companies before and after graduation Level of innovativeness Size of company and jobs created First revenues/losses Failures/discontinuation Growth ambitions

Source: based on Blenker et al. (2006), Braun (2011), Bridge et al. (2010), EC (2012a), Martinez et al. (2010), OECD (2009), OFEM (2008)

The "container knowledge" approach in EE proved to be unsuccessful (Braun, 2011). Delivered in the form of training, EE should provide knowledge when it is needed, apply experiential teaching methods and follow a process approach, where educators measure results at different steps starting from changes in key competences (Hytti et al., 2004). The explicit target remains enhancing entrepreneurial attitudes, or teaching "to become entrepreneurial", which corresponds to the education "through" entrepreneurship mode. Hence, the "about" teaching mode carries an implicit role, and only then, for a ready or prepared audience, is the last mode applied (see Figure 2).

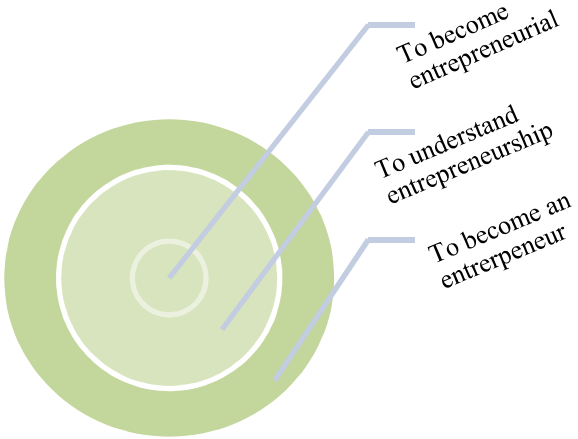

Figure 2. Prioritised aims of EE

Possible relationships between entrepreneurship education/training and subsequent behaviour have already been discussed by Martinez et al. (2010). The methodology of the Global Entrepreneurship Monitor (GEM) attempts to track connections between entrepreneurship and

economic development, where EE is one of efficiency enhancers. However, GEM's entrepreneurial behaviour is equal to engagement in early-stage entrepreneurial activity (nascent entrepreneurs and new business owners, TEA), which does not include intrapreneurship in this indicator. GEM uses the "gain from training" measure of the effect of compulsory training on how to start a business (versus no training on awareness, attitudes, intentions to start a business and TEA), which proves to be higher for innovation-driven countries (Martinez et al., 2010).

The European Commission report "Effects and Impact of Entrepreneurship Programmes in Higher Education" published in March 2012 is one of the known exceptions, which empirically approaches both groups of outcomes (EC, 2012a). The study based on a survey of a total of 1139 entrepreneurship alumni and 1443 control group alumni researched the impact of EE on the entrepreneurial key competences – knowledge, attitude and skills – necessary for achieving the entrepreneurial goals students set in their lives, as well as its impact on intentions towards entrepreneurship, individual employability, society and the economy. The results demonstrate that the scores of trained individuals for all indicators proved higher than in individuals from the control group. However, the research does not account for interrelations among the researched outcomes, intrapreneurship (directly), and does not provide a theoretical justification for the measures used.

To sum up, the learning and socio-economic outcomes of EE were integrated in this section into a holistic framework, which is both novel and justified from the viewpoint of educational theory and entrepreneurship research. The framework is also a means of measuring the impact of entrepreneurship education at educational and socio-economic levels, but suggests testing the linkages between the components of learning and real-life outcomes and their constituents in further research. This is the first time that these particular linkages have been presented and elaborated on in detail, bringing a novel contribution to the field of EE. Apart from the measurement of the impact of EE, the resulting discussion drew upon implications for the aims of study programmes and modes of teaching entrepreneurship.

5. CONCLUSION

The fundamental view of the outcomes of entrepreneurship education proposes two groups of outcomes at educational and socio-economic levels, which are hypothetically interconnected: attitude, knowledge and skills, and intrapreneurship, employability and venture creation, respectively. To construct this framework, the scientific origins and the applicability of the European Competence Framework (ECF) for EE were initially investigated. Secondly, the venture creation approach was challenged as the most popular way of measuring EE outcomes in real life.

The analytical retrospect revealed that the ECF, commonly used in EE, has theoretical grounds in educational theory (i.e. Bloom's Taxonomy of Educational Objectives) and strong influences from psychology (e.g. Theory of Planned Behaviour) (Kennedy et al., 2006; Fayolle et al., 2006; Krathwohl, 2002; Bandura, 1994). In spite of these developments, it features entrepreneurship-specific content, though the constituents vary across different sources. The ECF as such is universal and can be applicable to any discipline, including entrepreneurship, thus, it proved to be consistent for measuring EE outcomes at the educational level given some hierarchical and content refinements.

A range of prominent sources in entrepreneurship research (e.g. Blenker et al., 2006; Braun, 2011; Martinez et al., 2010; OECD, 2009; OFEM, 2008) provided grounds for the second group of EE outcomes, the socio-economic outcomes, and made it possible to assert that these real-life outcomes are the indivisible part of a holistic view of the issue. Since EE does not aim to make every student an entrepreneur from the onset, the question is how to measure the impact of EE among those students, who do not start up or start up at a later stage? As the ultimate goal of higher education is to prepare students for an economically viable working life, whether in self- or paid employment, two other indicators have to be considered in addition to venture creation – employability and intrapreneurship – where the latter is the universal real-life outcome that can lead either to entrepreneurship as a career path or higher employment positions. This article promotes the expanded meaning of intra-corporate venturing, or intrapreneurship, which also comprises undertaking managerial positions within companies, not limited to spinning-out or new subsidiaries (e.g. Bridge et al.; 2010 OFEM, 2008).

It became evident throughout this research that the socio-economic, or real-life, aspect truly distinguishes EE from other disciplines in higher education. What is more, deriving from the previous study (e.g. Rideout, 2008), which concluded that EE produces measurable outcomes only through mediating mechanisms, such as personal characteristics, networks, self-efficacy, etc., the resulting assertion is that the learning outcomes condition the achievement of the socio-economic outcomes. In the same manner, employability, intrapreneurship and entrepreneurship, the real-life outcomes of EE, are inter-linked with the educational outcomes – attitude, knowledge and skills – together forming an integrated framework, where not only are the components connected, but also the constituents.

As in any research, this paper has a number of limitations and delimitations:

1. Some elements of the integrated outlook already appear in existing research (EC, 2012a; Martinez et al., 2010), although these have a different purpose. At the same time, the new framework offers a lot of variables and new linkages between them, which may entail a deeper analysis rather pertaining to the future. For instance, the paper does not examine connections among the components at educational and socio-economic levels within the two groups of outcomes apart from hypothesising that they are interconnected.
2. There are a number of terminological limitations, for instance, in the synonymous treatment of aims, objectives and goals in EE programmes; outcomes, effects and impact of EE; entrepreneurship education and entrepreneurial learning and training.
3. The discussion of the differences between learning outcomes in traditional university education and training remained beyond the tasks of this paper.
4. The paper does not go into the details of the means of achieving the aims of EE programmes, or pedagogical issues, and does not set evident boundaries between learning and teaching EE.
5. The selected constituents in the target framework were selected considering the fact that a longitudinal study was not feasible due to the time constraints of the doctoral project. The socio-economic part of the framework focuses on the measurement of the performance of EE students, but is limited to the period from the 1st year in higher education to 2 years after graduation (Bachelor or Master).
6. The current discussion relates to higher education only.

7. As far as its aims, tasks and general scientific research methods are concerned, the paper is purely theoretical.

Although this article is theoretical, the new framework introduced here had not been used or discussed before in the existing literature, hence, it makes a novel contribution to the field of EE. The holistic framework partly solves the problem of writing the learning and real-life outcomes of EE, allowing for academic or practical freedom to select the most relevant components or to argue for the importance of some as opposed to others. Clearly set and defined outcomes are a prerequisite for measuring the results of EE, and these do not exist as a well-established system in most Eastern European institutions of higher education, so the framework provides ready content for this purpose. This is especially relevant in light of the generation of socio-economic impact through EE put forward in the EU policy essentials.

This extended framework of EE outcomes carries wider curriculum development implications, where the aims of EE, the perceived outcomes, teaching/learning approaches, and educational and real-life outcomes should be aligned. An adjacent implication relates to intrapreneurship. Entrepreneurs are capable of being intrapreneurs, or self-employed, while all intrapreneurs, in turn, are entrepreneurial employees; however, not all employees are intrapreneurs. Consequently, intrapreneurship is a generic socio-economic outcome to be targeted by EE programmes, implying the development of entrepreneurial personalities and an enterprise culture as noted by Fayolle et al. (2006), Hytti (2008), Kirby (2006), Blenker et al. (2006) and other experts. Then employability or entrepreneurship in the sense put forward by Schumpeter or Kirzner is one of the available paths, including transitioning employment into one's own venture through intrapreneurship or self-employment.

However, the most applicable implication of this framework in the short term is its further application in empirical studies within this doctoral project – formulating hypotheses based on inter-linkages among the outcomes, elaborating a questionnaire and measuring and comparing EE results in different countries. In the long-term, a longitudinal study can be carried out based on the framework, which will have been tested by that time. Above all, the teaching methods applied in EE might have a direct influence on how well the formulated outcomes are achieved. Consequently, further research whether in the short- or long-term should address this relationship by all means.

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KOKKUVÕTE

Fundamentaalne vaade ettevõtlushariduse väljunditele

Artikkel esitab ettevõtlushariduse väljundite tervikliku raamistiku nii hariduse perspektiivist kui sotsiaal-majanduslikul tasandil. Kasutades üldisi teadusliku uurimise meetodeid, monograafilist ning loogilist konstrueerimist uurib autor ettevõtlikku õppimist soodustava Euroopa Kompetentsiraamistiku põhialuseid ning toob välja selle rakendamise teadusliku põhjenduse. Käesolev töö on samuti esimene, mis rakendab ettevõtlikkuse lõimitud vaadet kui kombinatsiooni värvatavusest, ettevõttesisesest ettevõtlusaktiivsusest ning uute ettevõtete loomisest. Tehes seda selleks, et mõõta ettevõtlushariduse mõju ning luua seoseid reaalse elu põhiste ja hariduspõhiste õpiväljundite vahel. Käesoleva kirjutise sihtlugejaskonnana näeb autor ettevõtlusõpetuse pakkujaid, teadlaseid ning ettevõtlusharidust puudutavate otsuste langetajaid.