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Entrepreneurial Learning in Higher Education: Introduction to the Thematic Issue

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IN THIS INTRODUCTION to the thematic issue we review the theoretical foundations of the field of entrepreneurial learning and shed more light on entrepreneurial learning in higher education. Next, we discuss the importance of entrepreneurialism in universities to accommodate interdisciplinary learning modes. We then outline the article selection process and summarize the key elements of each of the included articles.

ENTREPRENEURIAL LEARNING: THEORETICAL FOUNDATIONS

Entrepreneurial Learning has recently emerged as a new practice involving both entrepreneurship and higher education processes. Cope (2005) observed that ‘a better theoretical grasp of entrepreneurial learning is imperative, as it is through learning that entrepreneurs develop and grow.’ Building on an educational case study, Rae (2009) defines entrepreneurial learning as learning to recognize and act on opportunities, and interacting socially to initiate, organize and manage ventures. This process has the double connotation both of learning to behave in, as well as learning through, entrepreneurial ways. Learning should be relational, authentic, relevant, useful and productively shared (Rae 2009). However, the concept of entrepreneurial learning has been mainly defined from a perspective of entrepreneurship theory. For instance, Minniti and Bygrave (2001) define entrepreneurship as a process of learning, where entrepreneurial learning is described as generated, at least in part, by the reinforcement of the belief in

[4] certain actions due to their positive outcomes. Similarly, Politis (2005) describes entrepreneurial learning as a process that facilitates the development of necessary knowledge for being effective in starting up and managing new ventures. His study highlights entrepreneurial learning as an experiential process where enterprising individuals continuously develop their entrepreneurial knowledge throughout their professional lives (Politis 2005). Entrepreneurial learning can also be conceived as a lifelong learning process, where knowledge is continuously shaped and revised as new experience takes place (Sullivan 2000). Based on Kolb's (1984) theory, entrepreneurial learning can be regarded as an experiential process in which entrepreneurs develop knowledge through four distinctive learning abilities: experiencing, reflecting, thinking, and acting (Bailey 1986; Johannisson, Landstrom and Rosenberg 1998). Following the same order of ideas, many other scholars have assumed that entrepreneurial learning is a process by which people acquire, assimilate, and organize newly formed knowledge with pre-existing structures, and how learning affects entrepreneurial action (e.g. Cope 2005; Corbett 2005; 2007; Rae and Carswell 2001; Warren 2004).

From these definitions, we can assume a strong relationship between the entrepreneurial process and learning. Minniti and Baygrave (2001) point out that 'entrepreneurship is a learning process, and a theory of entrepreneurship requires a theory of learning.' However, we still have a limited knowledge and understanding of the interaction between learning and entrepreneurship, and such a process remains one of the most neglected areas of entrepreneurial research, and thus, understanding (Deakins 1999). Entrepreneurial learning is seen as an extremely complex dynamic phenomenon (Warren 2004).

Learning is the process by which people acquire new knowledge, including skills and specific competencies, from experience or by observing others, and assimilate and organize them with prior knowledge in memory to make them retrievable for use in both routine and non-routine action (Anderson 1982; Holcomb et al. 2009). Learning is defined also as an emergent, sense-making process in which people develop the ability to act differently, through knowing, doing, and understanding why (Mumford 1995). By learning, people construct meaning through experience and create new reality in a context of



social interaction (Weick 1995). Accordingly, entrepreneurial learning is the outcome of dynamic social processes of sense-making, which are not only cognitive or behavioral but also affective and holistic (Gibb 2001; Cope 2005). It is a dynamic process of awareness, reflection, association, and application that involves transforming experience and knowledge into functional learning outcomes (Rae 2006), where ‘process’ refers to the logic of explaining the causal relationship between entrepreneurs’ previous experiences and the performance of the subsequent venture (Politis 2005). Entrepreneurial learning is hence complex and interconnected with a somewhat ad hoc approach to formal learning and a heavy reliance on experiential learning (Warren 2004).

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Very little effort has been made to distinguish between ‘entrepreneurial experience’ and ‘entrepreneurial knowledge’ or what Reuber, Dyke and Fischer (1990) refer to as ‘experientially acquired knowledge.’ Literature and research suggest that much of the learning that takes place within an entrepreneurial context is experiential in nature (e.g. Collins and Moore 1970; Deakins and Freel 1998; Minniti and Bygrave 2001; Reuber and Fischer 1993; Sarasvathy 2001; Sullivan 2000). Experiential learning can be described as the process whereby knowledge is created through the transformation of experience (Kolb 1984). Such learning can produce new behavioral patterns, judgmental structures, and generative mechanisms for action (Holcomb et al. 2009). This learning cannot and should not be divorced from the specific context, including organizational context, within which it takes place. Such learning occurs in a context of application which corresponds to Mode 2 knowledge production (Gibbons et al. 1994). According to Kolb (1984) we can distinguish between two basic and interrelated dimensions of experiential learning, i) acquisition (grasping) which corresponds to entrepreneurial experience, and ii) transformation that is considered equivalent to entrepreneurial knowledge.

Minniti and Bygrave (2001) ascertain that knowledge acquired through learning-by-doing takes place when agents choose among alternative actions whose payoffs are uncertain, and as result, risky. Kirzner (1979) defines entrepreneurial knowledge as a ‘rarefied abstract type of knowledge – the knowledge of where to obtain information (or

[6] other resources) and how to deploy it.' Acquired knowledge generates routines and decisional procedures. Routines are patterns derived from successful solutions to some particular problem (Nelson and Winter 1982). This shows how enterprising individuals continuously develop their entrepreneurial knowledge throughout their professional lives. According to Harrison and Leitch (2005), the experiential learning is a process that relatively permanently alters the character of behavior, and it is organized by existing operating procedures, practices, and other organizational rules and routines (Holmqvist 2003).

Holcomb et al. (2009) distinguish between experiential learning and vicarious learning, which can be defined as observational learning involving modeling the behaviors and actions of others (Bandura 1977). This suggests that people differ in the manner in which they accumulate knowledge. Learning processes adapt incrementally (Levinthal 1996) as people learn from the consequences of actions taken and from the behavior and choices they observe in others. Eliasson (1996; 1998) found out how experimenter managers have to bundle together a number of interrelated competencies into a competence bloc, through a process of creating (innovation), recognizing (risk capital provision), diffusing (spillovers), and successfully exploiting (receiver competence) new ideas in clusters of firms. For Piaget (1950), intelligence and learning take place in evolutionary stages where equilibration or our attempt to create a balance between ourselves and the environment leads to our intellect development by changing mental structures to reflect unique situations or new experiences (Honig 2004).

Different factors affect the entrepreneurial learning process. For instance prior knowledge and heuristics orient entrepreneurs to information cues and act to produce new knowledge on which entrepreneurs rely to recognize and exploit opportunities (Holcomb et al. 2009). Similarly, the entrepreneur's career experience, in terms of start-up, management, and industry-specific experience, is positively related to the development of entrepreneurial knowledge (Politis 2005) that facilitates decision-making about entrepreneurial opportunities under uncertainty and time pressure (Johannisson, Landstrom and Rosenberg 1998; Sarasvathy 2001). March (1991) argues that both ways of



transforming an experience into knowledge, namely exploration and exploitation, are essential to sustain learning. Nevertheless, maintaining an appropriate balance between exploration and exploitation is a primary concern for survival and prosperity (March 1991), as the exploitation of commercially successful new ideas provides the resources to support new exploration (Mintzberg and Waters 1982). This suggests that the entrepreneur's predominant mode of transformation moderates the relationship between his or her career experience and entrepreneurial knowledge (Politis 2005). Moreover, it can be argued that failure stimulates entrepreneurs to pursue an explorative search for new possibilities (Sarasvathy 2001), particularly in the case of 'intelligent failures,' which provide a basis for altering future behavior through new information from which to learn (Sitkin 1992). This suggests that entrepreneurial learning tends to be path-dependent (Minniti and Bygrave 2001). Experiential learning creates path-dependencies in which prior experience within a particular domain channels entrepreneurs' attention to those domains, making it more efficient to acquire and assess diagnostic cues, as well as identify opportunities within familiar areas (Holcomb et al. 2009).

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The entrepreneur's predominant reasoning also affects the accumulation of his or her knowledge (Politis 2005). Sarasvathy (2001) refers to two kinds of predominant logic or reasoning as: i) causal reasoning, which uses techniques of analysis and estimation to explore and exploit existing and latent markets, and ii) effectual reasoning, on the other hand, which calls for synthesis and imagination to create new markets that do not already exist. Rae (2006) found out that entrepreneurial learning occurs and can be interpreted by reference to three factors: i) personal and social emergence of the entrepreneur, ii) contextual learning which leads to the recognition and enacting of opportunities in specialized situations; and iii) the negotiated enterprise, which includes processes of participation and joint enterprise, changing roles over time, and engagement in networks of external relationships. Building on the first factor, Liang and Dunn (2008) pinpoint the importance of optimism vs. realism, among other entrepreneurial characteristics, to shape entrepreneurs' experience and consequently their knowledge.

ENTREPRENEURIAL LEARNING
IN HIGHER EDUCATION

[8] Entrepreneurship competencies are likewise ambiguous, comprising a range of personal characteristics, attitudes, and skills such as problem solving, leadership, communication, self-awareness and assessment skills as well as business and managerial competencies (Frank 2007). Gibb (1987) defines an entrepreneur as an individual demonstrating a marked use of enterprising attributes such as initiative, persuasive power, moderate risk-taking, creativity, independence, problem-solving, need for achievement, imagination, leadership, hard work and internal locus of control. According to MacPherson (2009), entrepreneurs exemplify nine common areas of learning content: acquiring business-specific knowledge; learning business mechanics; learning about context, customers, and the competition; studying people; studying leadership principles; reflecting on company values; and discovering how to create learning organizations.

Some scholars claim that even if some of the entrepreneurial information can be learned through education, much of the necessary knowledge about exploiting opportunities can only be learned by doing (Cope and Watts 2000; Rae 2000; Shane 2003). Having prior management experience provides the entrepreneurs with training in many of the skills such as selling, negotiating, leading, planning, decision making, problem-solving, organizing, and communicating (Lorrain and Dussault 1988). Accordingly, while certain functional skill sets can be 'taught,' experiential learning is essential to entrepreneurial learning (Gibb 1987; 1997; Gorman, Hanlon and King 1997; Deakins and Freel 1998; Warren 2004). Similarly, Politis (2005) claims that attempts to stimulate entrepreneurial activities through formal training and education are not likely to have any strong and direct impact on the development of entrepreneurial knowledge. Moreover, there has been extensive writing on entrepreneurship education (Gibb 1993), from which some authors have concluded that, while such education can provide cultural and personal support, knowledge and skill development about and for entrepreneurship, the 'art' of entrepreneurial practice is learned mainly in the business environment through inductive, practical and social experience rather than in the



education environment (Rae 2006; Gorman, Hanlon and King 1997).

Given both the extent and diffusion of entrepreneurship education, the dearth of researchers systematically evaluating the impact of course content on post-course entrepreneurial activity is quite surprising (Gorman, Hanlon and King 1997). Unfortunately, the literature attempting to systematically connect entrepreneurial formal or traditional education to entrepreneurial activity or performance is virtually non-existent (Autio et al. 1997). One exception is research that examines the impact of education on entrepreneurial intentions, in terms of a student's view of the desirability and feasibility of starting a business (Autio et al. 1997; Krueger 1993; Peterman and Kennedy 2003).

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It is our contention in this Thematic Issue that entrepreneurship education can foster entrepreneurial learning, and help individual students develop a set of skills and competencies that can facilitate and support their entrepreneurial activities. People acquire knowledge in three ways: by direct experience, by observing the actions and consequences of others, and by explicit codified sources such as books, papers, etc. (Holcomb et al. 2009). Entrepreneurs create highly efficient ways to acquire the knowledge and information they need to develop their business and realize their compelling vision. These include: learning through experience, learning from others, self-directed learning, reading, conversation, team learning, and critical self-reflection (MacPherson 2009). Whereas we cannot ignore the contribution of education to accommodate these different learning modes, we should also consider the limits of existing educational systems to develop innovative learning strategies that help students acquire entrepreneurial skills and competencies.

Attempts have been made to implement new learning strategies in line with Mode 2 knowledge production which is: carried out in the context of application, trans-disciplinary, heterogeneous, *heterarchical* and transient, socially accountable and reflexive (Gibbons et al. 1994). Maintaining that the contemporary MBA focuses too much on analytical decision making, Mintzberg has developed this critique by advocating pedagogical devices that improve the situational, collaborative, and global problem solving capabilities of contemporary managers (Mintzberg and Gosling 2002). Entrepreneurship course content

[10] varies widely, including the use of case material, simulations (Hindle and Angehrn 1998), trial and error, divergent thinking (Sternberg and Lubart 1999), and various ‘hands-on’ approaches (Gorman et al. 1997; Vesper and McMullan 1988). Other approaches include, for instance, Heinonen and Pikkijoki’s (2006) four-stage entrepreneurial process model connected with behaviors, skills and attributes, introducing an entrepreneurial-directed approach to education that was based on circles of experiential learning, with new activity producing new experience and new thinking through reflection. This is an example of the action learning approach, which is a structured and collaborative process of enquiry undertaken through questioning, acting, sharing experience and reflecting on problem-solving in practical situations (Rae 2009). Another learning strategy is PBL or Problem-based learning where learning is student-centered with teachers acting primarily in the role of facilitators (Hanke, Kisenwether and Warren 2005). Such a strategy significantly increases entrepreneurial self-efficacy and the ability to cope with uncertainty, both key characteristics of successful entrepreneurs. Similarly, business planning education has also been used in different academic settings based on the assumption that students who have learned to plan should demonstrate increased mastery, knowledge, and comprehension that would assist them in the process of starting a new firm (Honig 2004).

However, academic-led studies on the most relevant professional skills suggest that communication and writing skills remain relevant while analysis skills provision needs refocusing (Cuthbert 1994; Wong 1998; Ozawa and Seltzer 1999; Alexander 2001). Educational policy efforts aimed at stimulating entrepreneurial activities should primarily focus on developing creativity, critical thinking, and reflection among individuals, which in turn can have a profound influence on both their motivation and ability to develop entrepreneurial knowledge through their professional lives (Politis 2005). Rae (1997) asserts that only the combination of knowledge and skills with the right attitude and confidence can turn a graduate into an entrepreneur. Moreover, educational efforts should start early in the system, and not only at its very end (Johannisson and Madsén 1997).

Entrepreneurial learning is not accepted or adopted fully by busi-



ness schools or, indeed, by higher education as a whole, as their values of practical and emergent learning challenge the ‘bureaucratic control’ culture of academe, which privileges programmed knowledge (Gibb 2002; Rae 2009).

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DOES ENTREPRENEURIAL LEARNING REQUIRE
ENTREPRENEURIAL UNIVERSITIES?

Entrepreneurship ideas should be incorporated in higher education at both the organizational level (Clark 1998) as well as the program level (Volkman 2004), accordingly. Students need programs that support a range of ways that are often unplanned, emergent, short-term and non-sequential; that is, entrepreneurial (Gibb 2002; Atherton 2007). Hawkins (1998) has long advocated for planning education to incorporate basic management theory and skills. Pedagogical techniques should be developed that focus on applied hands-on activities, resulting in experiential learning, as opposed to the teaching of general principles (Honig 2004). Just as graduates should be able to write an essay expressing their personal thoughts and a scientific paper, placing evidence against hypotheses; so should they write a project plan, setting forth an idea for a new social or business project and a test of its viability (Etzkowitz and Zhou 2008).

Universities and academe have been criticized for their inability to provide such programs. Terenzini (1996) states that ‘we must consider why we do research and write.’ He asks pointedly: ‘Do we write for publication and, thereby, enhanced prospects for promotion and tenure? Or do we write to make a difference in the lives of others?’ The academic profession is embattled and its status has been questioned (Rinne and Koivula 2005). Academics are prone to teach what they know, not what their students or stakeholders need (Miclea 2004). The expression ‘stakeholders’ is more and more used to denote the environment of a university. They include students but also graduates, people of the neighboring towns and villages, local and regional authorities, and the business sector (local and national) (Pawlowski 2001). In current universities, students use learning ‘pushed’ at them through programmed or curricular structures, instead of engaging in the dynamic experience of developing their venture ‘pulled’ learning

as they require it in response to their questions and problems (Mumford 2006; Rae 2009). This process supports thinking ‘inside the box’ whereby students are taught an ideal method and are encouraged to conform to it (Honig 2004).

[12] Universities are faced with the question of the relevance of their study programs and their research projects, as the skills base of the economy is changing, an increasing number of voices claim that the disciplinary basis of universities is becoming irrelevant (Meira Soares and Amaral 1999). The model of interdisciplinary education leading to a degree – for example in business and law or political science and IT – hardly exists (Pawlowski 2001).

Universities were also described as professional bureaucracies, in which real power lies at the level of the classrooms and the research laboratories (Mintzberg 1979). As Steve Fuller (2005) writes, it may also be argued that the university represents ‘an impossible ideal’ that has never been realized and has been involved to cover a multitude of sins, especially ‘the velvet glove approach’ to the perpetuation of rule by elites. The whole university culture becomes questionable. Miclea (2004) describes this culture as being built on individual performance where students are evaluated through individual examinations, and the individual faculty not the team is promoted through individual achievements (published articles), and where departments represent collection of academics instead of working as a team animated by a single project. All these characteristics favor individual performance instead of an orchestra. This practice is neither good nor bad; however, it is simply not favorable for the training and development of self-employment related skills (Miclea 2004). Many faculty members lack also the incentives to engage in innovative entrepreneurial education processes as well as the facilitation skills required to make the format work well (Hanke, Kisenwether and Warren 2005).

Despite fundamental changes in the environment over the course of centuries, the university, with its long traditions, is one of the rare institutions that has preserved its basic characteristics and status in society (Rinne and Koivula 2005). Although it is often assumed that there is one main academic model, which was born in France in the 13th Century and which has spread around the world (Altbach 1996).



However, development in other parts of the world has not necessarily followed the same pattern because of varying historical, cultural and economic contexts (Husén 1996).

In the recent years we have seen many universities taking specific actions to adapt to the new social and business needs. Barnett (1994) has defined the changing situation as a shift 'from higher education in society to higher education of society.' Universities have developed technology transfer capabilities and extended their teaching from educating individuals to shaping organizations through entrepreneurial education and incubation (Etzkowitz and Zhou 2008). Formal degrees in entrepreneurship studies are typically hosted by a business school/faculty to provide a mix of theoretical grounding in business management as well as training in practical aspects of entrepreneurship (Frank 2007). Such programs have proliferated since their inception in 1947 (Volkmann 2004). One initial measure to increase the level of entrepreneurship skills teaching would be to make relevant learning outcomes more explicit and to contextualize them in respect to employability and entrepreneurship (Frank 2007).

[13]

The need for the universities to meet the challenges of the future has introduced the concepts of 'Learning University,' 'Innovative University,' and the 'Entrepreneurial University' (Kristensen 1999) as opposed to the teaching university, the research university, the elitist university, and the mass university which are based on disciplinary education and research (Rinne and Koivula 2005; Etzkowitz and Zhou 2008). These are more flexible organized universities that adapt (or pro-act) more easily under new circumstances (Meira Soares and Amaral 1999).

The fall of the *ivory tower* and the emergence and consolidation of the entrepreneurial university is the result of a complex interplay between exogenous and endogenous factors combined in different ways in different countries (Etzkowitz et al. 2008). Endogenous factors include internal transformations within the university or other bottom-up organizational and management changes driven by changes in the intellectual property regimes (Etzkowitz et al. 2008). On the other hand, governments at the national, transnational and regional levels increasingly expect universities to play a greater role in economic and

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social development (Etzkowitz and Zhou 2008). Industrial development will increasingly depend upon knowledge, a situation that makes education a major economic resource (Amaral 1991). One should refer to a recent statement by Peter Drucker (2000) who claims that education has become the main item of the Gross Domestic Product. Governments expect universities to do much more for society in solving economic and social problems, but at the same time they are reducing their financial support and are becoming unreliable patrons (Kristensen 1999). Slaughter and Leslie (1997) found that governments gradually give more priority to commercially oriented research at the cost of funding for basic research, and that public funding of education is continuously decreasing. This has led to an increased university autonomy which has also entailed greater responsibility (Meira Soares and Amaral 1999). A new actor, the 'market,' has replaced public administration as the driving force behind the development of higher education, as well as the main employer of its training and research products (Neave and Van Vught 1994). Universities will become less independent and less disinterested as they engage in joint ventures with industries, and they are forced by budget cuts to seek profit-making activities not only to accompany the increasing of the creation of knowledge but, in many cases, simply to survive (Meira Soares and Amaral 1999).

A knowledge-based socio-economic regime requires an institutional framework of university-industry-government (a tri-institutional model of society), each taking the role of the other while fulfilling traditional missions (Etzkowitz et al. 2008). Etzkowitz and Viale (2010) call this the triple helix model, where the relationships between universities, industry and government become intertwined, creating activities of collaboration through which the different rationalities of universities, government and industry are bridged and merged (Gjerding et al. 2006). Through the imagination, ambition, leadership and cooperation of individuals from universities, industry, and government, all the three institutional spheres participate in the birth of hybrid institutions and the emergence of a new phenomenon of 'industrialization' of the academy and 'scientification' of the industry (Etzkowitz and Viale 2010). This evolutionary pattern gave rise to a third academic



revolution, in which the university becomes an increasingly important platform for societal transformation instead of merely integrating research and economic and social development as academic missions (1st and 2nd academic revolutions) (Etzkowitz and Viale 2010). This calls for more reinforcement of the global role of the universities – from basic science to innovation and production. In a third academic revolution, the entrepreneurial university becomes the centre of gravity for economic development, knowledge creation and diffusion in both advanced industrial and developing societies (Etzkowitz and Viale 2010).

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This development will blur the distinction between basic and application-oriented research (Kristensen 1999). The traditional academic disciplinary borders will also disappear (Etzkowitz and Viale 2010), which will create new forms of integrated knowledge (e.g. the technological projects of ‘smart dust’ arising from nanotechnology and ICT or biochips from biotechnology and information technology).

Burton Clark (1998) describes the ‘entrepreneurial university’ as follows: ‘The entrepreneurial response offers a formula for development that puts autonomy on a defined basis: diversify income to increase financial resources, provide discretionary money and reduce dependency; develop new units outside departments to introduce new environmental relationships and new modes of thought and training; heartland departments that can look out for themselves, raise money, actively choose among specialties, and otherwise take on an outlook; evolve a set of overarching beliefs that guide and rationalize the structural changes that provide a stronger response capability; and build a central steering capacity to make large choices that help focus the institution.’ The critical factor for a university to be entrepreneurial is its organizational culture that must be characterized by a collective mindset in which entrepreneurship is facilitated in a combined top-down bottom-up fashion, including a high tolerance for risk-taking (Clark 1998). An important part of organizational culture is how flexibly rules are interpreted, and more specifically how rules support entrepreneurship, but also when not to apply rules and rely on broad, activity-directing instead (Gjerding et al. 2006).

The entrepreneurial university exemplifies also other characteristics:

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- To become entrepreneurial a university should develop high quality teaching and implement new pedagogical methods and focus on mobilizing the resources of students for the learning process (Kristensen 1999). The university should also have the ability to integrate research-based learning, market-sensitive teaching and life-long learning programs (Miclea 2004), professional, tailor-made and short courses (Cummings 1999), and project-based courses with inter-disciplinary groups and action-learning programs. Learning by discovery and teaching and learning by means of research processes must become the norm (Clark 1991).
- Raising funds from companies and private bodies to reinforce the university profile as a leading international research and education institution (Kristensen 1999). The entrepreneurial university should ensure outside funding by adapting to market-type modes of action or what Slaughter and Leslie (1997) call *academic capitalism*. Such strategies include patenting, subsequent royalty and licensing agreements, spin-off companies, incubators, arm's-length corporations and university-industry partnerships. Moreover, the MIT and Stanford cases are often taken to represent the necessity for a highly developed research university prior to the emergence of economic entrepreneurship in either its narrow economic or broader social formats (Etzkowitz and Zhou 2008). The funds raised from all the above-mentioned activities are generally spent for investment in research and education.
- Developing business research centers having active business participation in communities, on advisory boards, and steering groups for specific projects, and a strong commitment to developing science parks in the region (Kristensen 1999).
- Constructing a wide and deep portfolio of third-stream income from campus services and alumni fund raising (Clark 1998).
- A steering capability that is neither centralized nor decentralized. It could be characterized as 'centralized decentralization' (Clark 1998). The role of top-leadership in defining strategic issues for the institutional agenda is crucial (Kristensen 1999).



- The university Management should strongly encourage entrepreneurial activities among faculty through several actions: developing income-generating products and marketable services, consulting, business linkages, interdisciplinary partnerships and knowledge production in ongoing enterprises, and producing income from technology transfer activities which provide intellectual property (Slaughter and Leslie 1997; Subotzky 1999).
- Faculty should be encouraged to play the role of *entrepreneurial scientists* and network builders (Etzkowitz et al. 2008), having a triple academic career: basic scientist, innovation researcher and entrepreneur (Etzkowitz and Viale 2010).
- Supporting staff and faculty members to have the necessary competencies in strategic management, project management, knowledge management, and a clear understanding of modern pedagogy, which will make them *academic managers* (Zaharia and Gibert 2005).

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According to Hay et al. (2003) barriers to the development of an entrepreneurial culture in universities include the collegial, professional and bureaucratic nature of universities. A university cannot become entrepreneurial by simply creating innovative structures; it must indeed change its conceptions regarding the mission of the university in society (Zaharia and Gibert 2005). The process of entrepreneurial transformation is lengthy and varies from one university to the other, influenced as it is by traditions, economic development, cultural factors, and legislative frameworks (Zaharia and Gibert 2005).

Through the entrepreneurial transformation universities should not become enterprises, nor strive to be more like enterprises (Meira Soares and Amaral 1999). As Declercq (1987) stated 'only if universities remain very different from industry, will industry continue to come to them for ideas and solutions.'

THE GENESIS OF THE THEMATIC ISSUE

This Thematic Issue is an outcome of the 3rd EMUNI Conference on Higher Education and Research, organized in Portorož – Slovenia from September 23rd through 25th 2010, and that had as a theme

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‘Entrepreneurial Learning and the Role of Universities.’ The organization of this conference stemmed from EMUNI’s interest in promoting a scientific debate revolving around the importance of adopting entrepreneurial practices in Euro-Mediterranean Universities as a way to ensure their effective contribution to the economic and social development of the whole region. This has been also demonstrated through several actions that EMUNI has recently undertaken, including, for instance, the project that has been conducted jointly between EMUNI and the European Training Foundation (ETF) to assess the entrepreneurial learning practices in different academic settings with the involvement of experts from different Euro-Mediterranean Universities (e.g. Al Akhawayn University in Ifrane – Morocco, the International School for Social and Business Studies, Celje – Slovenia, University of Sousse – Tunisia, and University of Nova Gorica – Slovenia).

The rationale of the Thematic Issue is grounded in the relationship between entrepreneurship and learning effectiveness in higher education. The selection process took into consideration our interest in publishing articles that examines, conceptually and empirically, the process and outcomes of entrepreneurial learning practices in academe. The topics of interest included, but were not limited to:

- University/Enterprise Cooperation;
- University Fund Raising and EU Projects;
- The Role of Entrepreneurial Education in the Development of Priorities of the Euro-Mediterranean region;
- Lifelong Learning, Training and Education;
- Increasing Employability of Graduates;
- Recognition of Knowledge, Gained in Practice;
- Learning Entrepreneurship in Different Cultural Environments;
- National Higher Education Policy on Entrepreneurial Learning;
- The Mediterranean Business Development Initiative.

In total, we received 52 submissions mostly from Europe. All the articles were subject to a double review process. On the basis of the comments of the reviewers and the guest editors, seven articles were finally accepted for publication and these represent a sample of



entrepreneurial learning experiences in the Euro-Mediterranean area.

The articles fall into three groups. First there is one conceptual article which provides a learning model for the development of entrepreneurial intentions. The next five articles are based on empirical investigations of entrepreneurial learning strategies and competence development measures in higher education. The last article describes the principles of the entrepreneurial university and tests them in an academic institution.

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The articles collected in this Thematic Issue represent a milestone in the process of strengthening educational innovation and the cooperation ties between University, Industry and Government. However, they remain an attempt to define the critical factors required to institutionalize such best educational practices in Euro-Mediterranean Universities and help them fulfill their mission to contribute to sustainable economic and social growth.

In the first article, Valerij Dermol introduces a five-construct model of entrepreneurial learning that integrates entrepreneurial competences, self-efficacy, entrepreneurial intention, self-employment or enterprising behavior and teaching methods. In their article, Monica Wawer, Marek Milosz, Piotr Muryjas, and Magdalena Rzemieniak discuss a study of students' opinion regarding the use of simulation games as a teaching method. The article by Gruber-Muecke, Tina Kailer Norbert, Grabner Bernhard, and Stoegmueller Cornelia details an operational measure of competence development and examines both its validity and reliability in two well-defined populations, namely students and graduates of business schools. In her article, Marja-Liisa Kakkonen analyzes what business students learn in terms of entrepreneurship and what strategies they use in their learning during the first year studies. The article by Selda Önderoğlu, Bugay Turhan and Esin Sultan Oğuz examines how the satisfaction of outgoing Erasmus students can be broken down into assessments referring to broader aspects of the students' entrepreneurial thinking during the Erasmus period. In her article, Rita Klapper reports on classroom experimentations conducted in different European contexts using repertory grids, the methodological tool of Personal Construct Theory (PCT) in entrepreneurship teaching. Finally, the article by Dino Ar-

naut highlights the importance of the entrepreneurial university model and analyzes the current characteristics of the University in Zenica to identify the transformations required to become entrepreneurial.

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Development of Entrepreneurial Competences

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ENTREPRENEURIAL LEARNING seems to promote the emergence of entrepreneurship and enterprising undertakings among students and graduates of higher education institutions. The model of entrepreneurial learning which we describe in this paper consists of five constructs – entrepreneurial competences, self-efficacy, entrepreneurial intention, self-employment or enterprising behaviour and teaching methods. We assume that it is a combination of entrepreneurial competences and self-efficacy which encourages entrepreneurial intentions. On the other hand, a mix of appropriate teaching methods which act as moderating variables promotes the processes of learning and improves entrepreneurial competences respectively. The model assumes as well that more competent students and graduates usually possess stronger entrepreneurial intentions. In the paper, we propose a model of entrepreneurial learning on one hand, and suggest an approach for further research on the model, entrepreneurship and links between the constructs on the other.

INTRODUCTION

Most countries would like to encourage entrepreneurship among students and graduates of higher education institutions (HEI) or strengthen their willingness to undertake some kind of enterprising projects. It seems that in the higher education (HE) environment, entrepreneurial learning is an important mechanism for strengthening enterprising behaviour of students, or for encouraging them to enter into self-employment or entrepreneurship. It facilitates the acquisition of appropriate competences as well as strengthens the entrepreneurial intentions. Various studies note that only individuals who possess appropriate knowledge, skills and attitudes and who have sufficiently strong entrepreneurial intention enter into entrepreneurship or enterprising ventures – establish a firm, create and commercialise innova-

tions, establish coalitions or influence important decision makers in the organisation to undertake innovative or intrapreneurial projects, etc.

[28] In order to successfully implement entrepreneurial learning, it is necessary to choose the right methods of teaching and to adjust them to the objectives and competences that the individuals should achieve. There are some examples and case studies regarding these issues and links between them claiming that, for example, one approach to entrepreneurial learning is more effective than others but clear definitions and classifications are missing. A more systematic approach to entrepreneurial learning would encourage more educational organisations to further improve the quality of teaching and learning to promote entrepreneurial or enterprising behaviour.

In this paper we present a model for developing entrepreneurial competences and intentions and for encouraging entrepreneurial and enterprising activities among students and graduates of HEI. The model is based on some theories related to the cause-effect relationship between the constructs of entrepreneurial competences, self-efficacy, entrepreneurial intentions and entrepreneurial or enterprising action. The paper represents a starting point for further research on how to promote entrepreneurial knowledge, skills, attitudes and intentions. It also presents a short overview of teaching methods used to promote different kinds of entrepreneurial competences. Our purpose is to introduce some future guidelines on how to ensure that more students and graduates enter entrepreneurship or undertake enterprising ventures.

ENTERPRISING INDIVIDUALS

Antončič et al. (2002) define entrepreneurship as an independent process in which the entrepreneur creates something new and worthy, which requires some time and effort, and assumes the financial, psychological and social risk but also possible reward in the form of money or personal satisfaction and independence. This definition also applies to intrapreneurship or corporate entrepreneurship (Jong and Wennekers 2008), with the difference that intrapreneurs operate within the organizational boundaries and are therefore less autonomous, their



potential financial benefits are weaker and the risks are lower. Organizational context certainly places some restrictions, but on the other hand it offers the entrepreneurs greater security, especially in the case of failure – they usually don't suffer personally.

The concept of entrepreneurship includes professional and behavioural dimensions (Jong and Wennekers 2008). Professional refers to the functioning of individuals who either own and operate a business or are employees in firms owned by others, and the behavioural dimension which focuses on specific behaviours – whether entrepreneurial or managerial. In this way, it is possible to recognize three different entrepreneurial roles – business owners, independent entrepreneurs, and employees with entrepreneurial or enterprising behaviours – intrapreneurs. On the basis of this classification we can define so-called enterprising individuals, including independent entrepreneurs, managers who show an entrepreneurial and not merely managerial mode of behaviour, and enterprising employees. In this paper we focus on students and graduates who may appear later in their professional career in any of these three roles.

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ENTREPRENEURSHIP EDUCATION

Research confirms the high importance of entrepreneurship education. It recognises influences on the emergence of entrepreneurial intentions, as well as on the quality of entrepreneurship – on the survival rate of new businesses and on their growth (Lans et al. 2008). The policies regarding education and training of most countries recognize the need for entrepreneurship education and for fostering the entrepreneurial mindsets of young people and for encouraging the emergence of new firms or other enterprises (European Commission 2008).

Lans et al. (2008) divide entrepreneurship education into educational efforts in terms of changes in the state of mind, in terms of enhancing entrepreneurial behaviour and in terms of mastering some specific business situations. In the first case, the education should focus on the creation of appropriate values, beliefs and attitudes associated with successful entrepreneurship and intrapreneurship as well. In the second case, considering entrepreneurship as a matter of behaviour, education should encourage transfer of specific abilities re-

[30] lated to entrepreneurial behaviour (whether on the role of independent entrepreneur, entrepreneurial manager or enterprising employee). In the third case, in which entrepreneurship is aligned with mastering of specific situations, education should focus on handling functional expertise – such as, how to start a business, how to explore the market, etc. The latter situation relates especially to individuals who are considering establishing their own firm.

In entrepreneurship education literature, two names appear as synonyms for entrepreneurship education – entrepreneurship teaching and entrepreneurial learning. The former consists of two components (European Commission 2002) – the transfer of entrepreneurial attitudes and skills developing relevant personal characteristics which are not directly linked to the business context (e. g. creativity, risk-taking, responsibility), and specific training on how to create a new firm (e. g. technical and business skills). On the other hand, entrepreneurial learning is defined as all forms of education and training, both formal and informal, which contribute to the entrepreneurial spirit and learning with or without commercial objectives (Gribben 2010). Holcomb et al. (2009) define entrepreneurial learning as a process in which people absorb new knowledge from direct experience or from observation of other peoples' behaviour, actions and consequences, make intuitive conclusions or heuristics because of environmental uncertainty and inconsistent information, and organize acquired knowledge by linking it with pre-existing knowledge structures.

Studies identify many possible approaches to entrepreneurial learning in the HE environment. Most of them are consistent with definitions of entrepreneurial learning or entrepreneurship teaching. Jones-Evans, Williams and Deacon (2000) for instance indicate the action learning approach (Revans 1980). Hampden-Turner (2010) describes a similar approach integrating simulations and games of managing the business, and organising meetings with some of the world's leading entrepreneurs. Harkema and Schouten (2008) indicate examples of student-oriented learning of entrepreneurship based on psychological tests for selection of appropriate students, and on planning of learning by the student himself/herself, and using personal coaching. As Hanke, Kisenwether and Warren (2005) note, the introduction of



the problem-based learning and distance learning approach enhances students' self-efficacy and their capacity to manage uncertainty. An interesting approach involving works of fiction or film productions is indicated by Bumpus and Burton (2008). Such approaches can result, for example, in understanding of the ethical and economic concepts, understanding of concepts related to the human resource management, encouraging the use of different management styles, introduction of important strategic management principles, organizational culture analysis, and understanding of the organizational behaviour concepts.

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Obviously, many authors note that entrepreneurial learning methods should be interactive and action oriented. The teaching should involve students as much as possible, and the teacher should have some real life entrepreneurial experiences and build the learning content as much as possible on them. As motivation for the students to start their own firm, role playing and discussion of case-studies could be beneficial, while for recognition of business opportunities action learning approaches are appropriate and, for learning about the process of business idea commercialization, guests from practice and competitions involving business plans are best suited. Creativity, which seems to be very important for the entrepreneurial individual, could be encouraged by the use of group techniques for generation of new ideas and 'live' case studies, which stem from existing business cases and current business models. Within entrepreneurial learning business planning workshops, guests from practice and business simulations should be introduced as well. The Expert Group of the European Commission (European Commission 2008) also notes that the approaches (and contents) of entrepreneurial learning should differ in business and non-business HEI, and there should be a distinction between approaches at the first and the second level of study as well.

In table 1 we give a summary of possible teaching methods in entrepreneurship learning at HEI (European Commission 2008).

In relation to entrepreneurial learning, contents of sustainable development apply as well. Modern societies expect from educators to fully prepare the young people, including future entrepreneurs, for their professional life and/or for continuing education as well (Sleurs

TABLE 1 Overview of teaching methods for entrepreneurial learning

Learning through experience and experimentation	Learning by observation and examples
Action learning	Meetings with leading entrepreneurs
Simulation	Integration of works of fiction or film productions
Role playing	The integration of teachers' real life experience
Use of personal instruction	Case studies with discussions
Self-directed learning	Study of 'live' entrepreneurial cases
Problem-based learning	Guest speakers – entrepreneurs as lecturers
Distance Learning	
Business plan competition	
Group techniques to create new ideas	
Business planning workshops	

[32]

2008). Educational systems largely assume the important role of socialization. They are in fact expected to prepare the young people to take responsibility for the society in which they live. Educational programs in many countries include the contents of sustainable development – such as environmental education, health education, citizenship education, education for peace, etc.

Schools should encourage individuals to reflect about their life styles and associate them with issues of sustainable development and their life (Scott 2002). European universities and some other partners (Sleurs 2008) note that the role of education is in promoting independent thinking as well, and therefore they strongly emphasize the importance of critical reflection about the vision of sustainable development. Education should encourage and teach individuals how to (1) think about their own situation and the situation of others recognising their interdependence, (2) critically assess situations, (3) self-reflect about the role, possibilities and limitations of personal and collective responsibility, and (4) make responsible decisions and take actions at both personal and societal level. It seems that the approaches to learning about sustainable development are consistent with the teaching methods mentioned in table 1, particularly in the case of self-directed learning, problem-learning, discussions and case-studies, etc. – methods that encourage reflection, self-reflection and transfer of views and values.



We believe that the choice of teaching methods is crucial for the effectiveness of entrepreneurial learning, and respectively, entrepreneurial education. Košir and Bezenšek (2009) and also Burke et al. (2006) and Arthur et al. (2003), in their meta-researches on organisational training effectiveness, note that the mix of implemented teaching methods significantly influences the quality of learning in the sense of students' satisfaction, possible changes in their knowledge structures and behaviour, and also in the sense of the individual and organisational performance. On the basis of such considerations' we state the following proposition:

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- P 1 *The mix of teaching methods used as a mean of HE entrepreneurship learning has an important moderating impact on the process of entrepreneurial learning and on the creation of entrepreneurial intentions.*

ENTREPRENEURIAL COMPETENCES

The Dictionary (www.answers.com) defines competence as the ability of implementation, especially of something physical, mental or financial, or as a legal power to achieve something. It is either a natural or an acquired skill or talent. Despite such a relatively clear definition, Lans et al. (2008) note that in practice the construct of competence is surrounded by a great deal of confusion.

Due to the differences between the components of competences – achievements, capabilities, tasks, and personal characteristics – competences are a 'fuzzy' concept (Le Deist and Winterton 2005).

As identified by Lans et al. (2008) competences are a mix of knowledge, skills and attitudes. They can also be defined as broader personal characteristics necessary for superior behaviour, but also as an outcome of a proper application of knowledge (Brown 1993). Le-Brasseur, Blanco and Dodge (2002) note that when considering competences 'the emphasis is on behaviour and performance.' They understand a competency as 'an effective performance of a task or activity in a job setting, due to the underlying characteristics of the individual: motives, traits, skills, self-image, social role, or knowledge and experience.' Obviously competences can be defined as professional standards as well. They can be therefore identified by conduct-

[34] ing a job analysis within different work or social contexts. Furthermore, Le Deist and Winteron (2005) also recognise so called meta-competences. They define them as a capacity to manage uncertainty, learning and reflection and are usually related to 'learning to learn' ability. As a kind of meta-competence, Gagne (Richey 2000) recognises so-called cognitive strategies. He defines them as intrinsically organised skills directing personal behaviour at learning, memorising and reflecting. They are related to self-management and self-control of learning and thinking, and not to the context in which the individual operates. To acquire them it takes a lot of practice and opportunities to reflect.

Competences are closely related to work contexts (Sandberg 2000). In many cases they can be considered as tacit knowledge (Polanyi 1966), which individuals automatically have at hand when they need it, but they are usually not aware of having such knowledge (Dermol 2010). Related to this, Cope and Watts (2000) recognize the developmental aspect of competence. When the competences are used in practice, even unconsciously, experiential learning takes place which on the other hand improves these competences – e. g. by reflection on critical incidents, by testing the learning or by observation. We can conclude that entrepreneurial competences are not fully given to individuals at birth, but are created through the processes of education, training and experience (Lans et al. 2008)

Personal history is also very closely linked to the concept of the competences. It is actually the outcome of experiential learning, which is considered by many authors to be the most important method of adult learning (Jarvis, Holford and Griffin 2006). It takes place anywhere and at any time and includes the acquisition of all types of knowledge, skills and experience (Trunk Širca and Gomezelj Omerzel 2006). Experiences in the sense of trial and error processes and observation of other people are the basis for learning, but they are also a very important learning stimulus (Jarvis, Holford, and Griffin 2006). Boyd and Vozikis (1994), for example, highlight the findings of various studies showing that very often the parents of entrepreneurs are self-employed, which seems to affect the future entrepreneurs' inspirations and desires for training and education.



Cognitive Competences

Cognitive competences are primarily related to 'knowing that' and 'knowing why' knowledge. Le Deist and Winterton (2005) for example define cognitive competences as conceptual or theoretical knowledge on one hand and understanding on the other. Gagne in his studies about learning domains recognises so called verbal information and intellectual skills which are both tightly related to cognitive competences (Richey 2000). Verbal information consists of facts, principles and generalizations presented and organized in a meaningful context and represents the basis for learning. It is usually called 'the knowledge'. Intellectual skills can be defined as skills that allow better understanding of different rules and concepts, differentiation between the latter and also as skills enabling action and decision making. Gagne states that they don't offer the answers to the question 'What do individuals know?' but to the question 'What are individuals capable of doing?' (Dermol 2010). Cognitive competences seem to be learned formally within an organised learning environment, but they can be gained informally by experience as well (Le Deist and Winterton 2005).

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There are various social, cultural, political and economic factors which influence the realisation of entrepreneurial intentions and the formation of new businesses. Boyd and Vozikis (1994), who summarize the findings of various authors, highlight factors such as: change in employment, previous work experience, the quality of urban life, membership in certain ethnic groups, etc., as well as the availability of venture capital, governmental impacts, availability of buyers, suppliers and transportation options, educated labour force, land and equipment and other support services. Relevant information availability and perception of environmental factors may play an important role in the construction of individuals' expectations and their views on the feasibility of possible entrepreneurial ideas. The knowledge and understanding about these issues seems to be an important entrepreneurial competence and an important learning outcome of entrepreneurial learning at HEI as well.

In the last 30 years many scientists have been trying to identify the characteristics that distinguish entrepreneurs and nascent entrepreneurs from all other people (Boyd and Vozikis 1994). As Carter

[36] and Jones-Evans (2006) note, psychologists highlight the importance of entrepreneurial personal traits – the need for achievement, locus of control, propensity to take risks, tolerance for uncertainty, etc. Attempts to develop the personal profile of a typical entrepreneur, based solely on psychological constructs have been proven largely unsuccessful. These psychological constructs may be part of entrepreneurial (cognitive) competences, but empirical studies show that only a very small part of differences in entrepreneurship (e.g. measured performance of new businesses) could be explained by them (Lans et al. 2008). Bloom (Richey 2000) classifies cognitive learning objectives and consequently cognitive competences hierarchically as (1) *knowing* of terminology, concepts, rules, procedures and theories, (2) *understanding the knowledge* with capabilities of self-change, foresight, integration and forecasting, (3) *using the knowledge* in terms of operation, problem solving, and knowledge transfer, (4) *analysis* with capabilities of information interpreting, (5) *synthesis* with capability of new conceptual links creation and experimentation, and (6) *evaluation* with the capabilities of value judgments about the use of different methods, technical solutions and products (Dermol 2010). According to that, Pagon, Banutai and Bizjak (2008) define the following types of cognitive competences: divergent thinking, critical thinking, problem solving, strategic thinking, analytical skills, and numerical abilities.

The European Commission (2008) notes that in the context of entrepreneurial education and HEI it is necessary to impart the knowledge and understanding on how to establish a new business and how to encourage its growth – at the first study level especially through the promotion of self-employment concept; at the second level, however, through the knowledge and understanding of business planning processes and in the environment available entrepreneurial support mechanisms. Also, at non-business HEI the entrepreneurial learning should provide some practical basics about: economics, marketing, management techniques, protection of intellectual property, commercialization of innovation, and venture capital availability. Humanities and arts students should be aware of the problems concerning self-management issues, social entrepreneurship, options for partial self-employment and also of the innovation issues, especially the ones based on user's needs.



Functional Competences

In this case the competences are associated with *practising* the profession and with *mastering* various entrepreneurial situations (Le Deist and Winterton 2005). Functional competences are practical intellectual skills related to the understanding of entrepreneurial concepts and relationships between them, mastering different rules connected with these concepts and entrepreneurial decision making as well (Richey 2000). They are actually 'know-how' knowledge, which a person operating in a particular occupational or entrepreneurial field should be able to perform or exhibit.

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Entrepreneurial learning related to the transfer of so-called functional competences needed to carry out certain tasks or to implement some innovative work or business approaches, should focus on actual business situations, on innovation, on intrapreneurial initiatives, or on creation of new firms, and on finding the ways to enter new markets, etc. It is especially worth mentioning that such competences should enable the learner to identify entrepreneurial opportunities (acquisition of information and its interpretation), to create new business concepts (products, services, markets, customers), to conduct market research or acquisition of assets (funding, human resources, etc.) and to organise the business (to enter into arrangements, to establish working routines and organisational structures) (Jong de and Wennekers 2008). Zinger et al. (2001) identify ten areas of managerial competences, which are related to entrepreneurial situations as well: customer service, business image, pricing, operations, supply management (purchasing, inventory control), ability to develop new products and services, financial management (monitoring receivables, developing financial projections), general management (monitoring business trends, delegating), using computer technology, advertising and promotion, and financial control (using budgets for setting targets and evaluating results).

Behavioural Competences

Behavioural competences are personal, learnable competences related to entrepreneurial or enterprising behaviour. They represent the answer to the question – how to behave in certain entrepreneurial situations (Jong and Wennekers 2008). Within the concept of behavioural

competences we can distinguish between social competences and meta-competences.

[38] Social competences are the skills related to successful functioning in a society. They are outward orientated. Meta-competences on the other hand are inward orientated. They are conceptual skills of learning and reflecting. They encourage the acquisition of other competences as well (Le Deist and Winterton 2005). Gagne identified them as cognitive strategies because they direct the behaviour of individuals in the moments of learning, memorising and reflecting (Richey 2000). According to him, learning of these skills requires a lot of practice – especially in terms of allowing the opportunity to challenge thinking.

Among the social competences we can also place the ethical competences with ‘the possession of appropriate personal and professional values and the ability to make sound judgements based upon these in work-related situations’ (Le Deist and Winterton 2005, 35). In addition, Elmoose and Roth (2005) recognized three kinds of competences of sustainable development: understanding and being able to change a person’s own life conditions, participating in collective decision making and showing solidarity with those who are unable to control their living conditions. Sustainable development is seen as a core value for every citizen, to be always present in their minds.

Among the behavioural competences associated with entrepreneurial behaviour we should highlight in particular competences related to: researching and realisation of entrepreneurial opportunities, production of creative ideas, taking responsibility for the execution of such ideas or other activities, handling the uncertainties and risks, creating favourable coalitions within an organisation, selling skills, initiative taking, problem solving and overcoming potential barriers (Jong and Wennekers 2008). Miller and Friesen (1982) and Miller (1983) identified three entrepreneurial orientations defining different kinds of entrepreneurial behaviour: product-market innovation, risk-taking for large benefits, and proactivity in the market. Entrepreneurial orientation is a firm-level concept, but it can be easily translated to the individual level of entrepreneurial behaviour as well. Quinn et al. (1996) on the other hand proposes eight managerial roles: mentor, facilitator, monitor, coordinator, director, producer, broker, and innovator. Each



role demands some specific competences – in most cases related to communication skills – for example, entrepreneurs as mentors should be able to communicate effectively with their subordinates and to develop them as well. LeBrasseur, Blanco and Dodge (2002) in their study of entrepreneurial competences identify the top five competences required during the survival stage of a small firm: perseverance, effective communication, judgement, individual productivity, and creative thinking. In the fast growth stage of a small firm less importance is attributed to innovating in products/services and planning and monitoring cash flows competences, on the other hand, more importance is attributed to developing subordinates and effectively delegating competences.

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ENTREPRENEURIAL SELF-EFFICACY

Self-efficacy can be defined as person's belief about his or her ability and capacity to accomplish a task or to deal with the challenges of life (Bandura 1993; 1997). It seems that self-efficacy affects the individuals' beliefs about possibilities to realise the objectives, as well as their personal choices, desires, efforts and perseverance – even in case of setbacks or obstacles (Boyd and Vozikis 1994). On the other hand, if individuals perceive that a given behaviour exceeds their capacity, they do not react – even in cases when society encourages such behaviour. Bird (1988), who focuses his study on enterprising individuals linking individual self-efficacy with entrepreneurial intention, also believes that only individuals who believe that they are capable of implementing certain activities actually realise their enterprising or entrepreneurial desires. Because of such considerations we state the following proposition:

- P 2 *Students and graduates with a strong sense of self-efficacy are more likely to challenge themselves with difficult tasks, be intrinsically motivated and are therefore more likely to form firm entrepreneurial intentions.*

Lans et al. (2008) believe that the motivational concept of self-efficacy relates to the concept of competences, but it is not a part of it. Empirical studies show that self-efficacy has a reciprocal effect on entrepreneurial competences. Absorption of competences and past

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performance enhances self-efficacy and helps to strengthen the desire and improve future performance. This applies vice versa as well – self-efficacy affects the acquisition of competences and individual performance. Boyd and Vozikis (1994) note that self-efficacy is obtained through life stages, it is developed in line with experience since it enables the development of complex cognitive, social, linguistic and/or motor skills.

Individuals create and strengthen their beliefs about their self-efficacy in four ways (Boyd and Vozikis 1994; Erikson 2003): (1) through experience (experiential learning), (2) by observing others or by vicarious learning (e.g. influence of parents, mentors, etc.), (3) by the means of social persuasion (e.g. providing feedback, existence of social norms and conduct of discussions), and (4) through an assessment of their own psychological state. Namely, empirical studies suggest a negative correlation between the degree of anxiety and self-efficacy. In order to enhance the self-efficacy, it is necessary to improve the individual's emotional and physical condition and reduce stress. The individual's estimates of availability of assets and possible personal or situational limitations also affect the beliefs about self-efficacy (Fishbein and Ajzen 1997). In accordance with the described findings we state the following propositions:

- P3 *Teachers at HEI can use various strategies to build students' and graduates' entrepreneurial self-efficacy, but all of the strategies are based on the processes of enhancing the entrepreneurial competences.*
- P4 *Enhanced entrepreneurial self-efficacy positively influences the construction of entrepreneurial competences.*

THE MODEL OF ENTREPRENEURIAL LEARNING

The emergence and development of the entrepreneurial intention is influenced by the individual's beliefs and potential reactions to environmental impulses (Fishbein and Ajzen 1997). Each individual develops a repertoire of beliefs and his or her potential reactions to environmental impulses. Beliefs are formed on the basis of personal variables and variables related to the context in which the individuals operate. They are the products of the individual's personal history (experiential learning,



vicarious learning, action learning, problem learning, trial and error learning, etc.) and changes in his or her social context. They are obviously based on different kinds of learning and, respectively, on the mix of the individual's competences. As Boyd and Vozikis (1994) state, these beliefs and potential reactions are some kind of 'saved information' which directs personal behaviour and are a function of personal (personal history, personality and abilities) and contextual variables (social, political, economic context). On the bases of 'saved information', individuals construct their expectations and attitudes which subsequently affect the individual and his or her intentions.

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It seems that entrepreneurial competences are closely linked with behaviour and performance and are considered to be a predictor of entrepreneurial intentions. On the basis of entrepreneurial competences, individuals' beliefs and expectations are formed about the tasks and expected performance. We therefore state the following proposition:

- P 5 *Entrepreneurial competences which are actually learnable and measurable knowledge, skills and attitudes are the base for construction of individuals' beliefs, potential reactions, expectations, and attitudes about their potential performance and of their views on the feasibility of possible entrepreneurial ideas and as such they positively affect entrepreneurial intentions.*

As an important construct which is involved in the process of creating intentions, Boyd and Vozikis (1994) include self-efficacy (Bandura 1993; 1997) as well. Entrepreneurial intention seems to be crucial for the realization of the ideas that emerge in the minds of enterprising individuals (Bird 1988; Boyd and Vozikis 1994). The intention has a significant influence on the critical strategic thinking of enterprising individuals. It is a state of mind, which directs the actions of individuals and leads them towards the development and realization of their ideas and/or business concepts. Individuals with the intention are more able to focus their attention, experience and knowledge in a specific subject or a method of behaviour. Based on such considerations, we state the following proposition:

- P 6 *Entrepreneurial intention positively influences the emergence of entrepreneurial or enterprising behavioural and cognitive change.*

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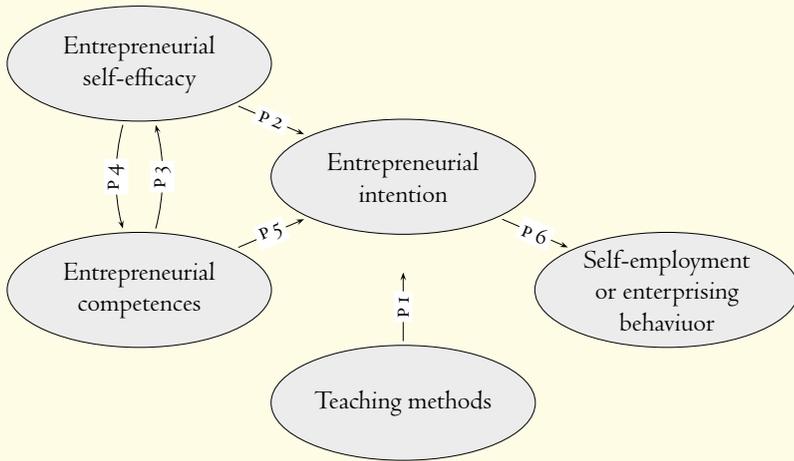


FIGURE 1 Model of entrepreneurial learning

Figure 1 illustrates the final model of the entrepreneurial learning consisting of all the described constructs and links between them.

DISCUSSION AND GUIDELINES FOR FURTHER RESEARCH

In this paper we recognize the factors – competences and self-efficacy – which promote and enable the decisions of individuals, students and graduates, about the possible realization of their entrepreneurial or enterprising ideas or their potential entry into self-employment. We are of course interested primarily in students and graduates of HEI. In the paper there is a short review of the competences which in the entrepreneurship literature are usually attributed to the independent entrepreneurs, business owners – managers and enterprising employees (intrapreneurs). These are the competences that enable individuals to absorb or use the entrepreneurial knowledge, skills and attitudes (competences), but also reinforce their beliefs in being able to successfully implement entrepreneurial intentions (self-efficacy). The proper combination of competences and self-efficacy may enhance individuals’ entrepreneurial intentions and serve as an action guide when performing their intentions.

Based on these considerations, we propose empirical verification of



the model, illustrated in figure 1 within the HE environment. The study we propose could be based on the findings in some already existing studies. Jong and Wennekers (2008) in their study, for example, state indicators which they found in entrepreneurial and management literature and which allow for the measurement of entrepreneurial competences. Liñán and Chen (2006), in their study based on the theory of planned behaviour (Ajzen 2002), define indicators of entrepreneurial intentions. The study, which is tightly connected with the model presented in figure 1, confirms the theory of planned behaviour within HEI. Indicators of the construct of general self-efficacy are developed by Schwarzer and Jerusalem (1995), and could be used in the proposed research as well. To conclude, the model presented in this paper, and the proposed indicators measuring dependent and independent variables in the model, may be a sound starting point for a detailed study of entrepreneurial learning in the context of HEI. As a possible approach to analysing the data and to obtaining some theoretical and practical guidelines we propose structural equation modelling, which is probably the best way to simultaneously test all cause-effect relationships in the model and to explore possible moderator effects of using different kinds of teaching methods.

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In this paper, when referring to the typology of entrepreneurial competences (Le Deist and Winterton 2005) we also recognize the knowledge, skills and attitudes to be possessed by enterprising individuals, in order to be successful. At the same time we try to recognize the contribution of some teaching methods that have been successfully used in entrepreneurial education practice (European Commission 2008) to develop or improve the entrepreneurial competences. In the literature there are, for example, several studies examining the influences of using different teaching methods or a mix of them on Kirkpatrick's levels (1998) of training outcomes (participants' satisfaction, individual's learning, individual's behaviour and organisational results). On the other hand, there is a lack of studies examining the causal links or correlations between the components of entrepreneurial competences and teaching methods in the literature. There can be found only some sporadic reflections and reasoning about that issue (see Gibb 2002). Therefore, further research related to entrepreneurial learning

should be conducted in this direction, because the findings may have a significant impact on the strategies to promote entrepreneurial learning and to improve entrepreneurial competences and intentions of students and graduates, as well as the quality of their entrepreneurial and enterprising activities.

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Business Simulation Games in Forming of Students' Entrepreneurship

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BUSINESS SIMULATION GAMES are an effective method of learning how to manage the business processes in a modern enterprise. These kinds of games may also help to form and develop the enterprising attitudes and to learn the methods of modern management. For students, there is the possibility to be, e. g., a business manager who has to make decisions in the conditions of market competition. Starting to work as a manager, the graduate finds himself/herself in a situation, in which it is necessary to take the financial risk of own decisions. This is why it seems so important to use different forms of training for future managers. Business simulation games are evaluated differently by teachers and students. This paper includes a presentation of students' opinions about the simulation games as a teaching method and an analysis of their opinions.

ENTREPRENEURSHIP AND ENTERPRISING ATTITUDES

Many authors describe entrepreneurship in various contexts, e. g. in four dimensions consisting of: new business venturing, innovativeness, self-renewal, and proactiveness (Bhardwaj et al. 2007). It can also be understood as running a small company and a way of managing an organization. In this case, the term 'entrepreneurship' is usually used to describe small business, style of managing, establishing modern companies and implementing innovations in organizations (Serviere 2010). Hence, the aforementioned concept relates to the economic sphere. However, it is possible to specify other forms of entrepreneurship,

[50] such as social and political entrepreneurship as well as manifesting entrepreneurship in personal life. Another key way of understanding the concept of entrepreneurship refers to features possessed by an individual. In this case, it is a synonym for efficiency, courage, energy, enthusiasm and resourcefulness. Entrepreneurship is also understood as an individual's attitude towards life characterized by dynamism, inventiveness and a tendency to take risk.

Entrepreneurship is sometimes treated as a special ability, talent or even a kind of genius. However, in this context it is treated as an elite phenomenon that is available only for a small group of people. The unique character of such a type of entrepreneurship results in the fact that its shaping in the process of education has often limited scope and is characterized by specific conditions (Watson 2010).

Entrepreneurship is also a social and economic phenomenon related to certain types of active behaviors taken up by individuals within the frames of a given community. An innovative approach, searching, creating, identifying and using the opportunities that emerge in the environment are the substance of these behaviors. Therefore, such an active attitude does not necessarily have to be connected with the creation of a new organization (Mitchell et al. 2000).

The assumption that entrepreneurship is the realization of an activity on large scale, and of showing initiative in an organization, is one of the most commonly accepted interpretations of the analyzed concept. In this context, entrepreneurship is an activity that can be realized by means of acquired skills, such as: formulating aims, planning, creative thinking, making decisions, analytical skills, permanent studying or implementing changes among others (House et al. 2004).

Entrepreneurship is also identified with innovation. According to Drucker, innovation is a special tool of entrepreneurs by means of which they are able to convert a change into an opportunity for taking up new business activities or providing new services. Drucker claims that entrepreneurs should purposefully search for sources of innovations, changes and their symptoms that indicate an opportunity for effective innovation (Drucker 2006).

In the theory of economics, entrepreneurship is defined as a special form of labor or a fourth (together with labor, land and capital)



production factor. Entrepreneurship, understood as a form of labor (labor has an enterprising character), assumes achieving material goals (such as money, profit and prosperity) as well as non-material goals (the need for power, success and independence).

It is necessary to mention the simplest, yet equally important, way of understanding the concept of entrepreneurship. It is a discipline of didactics and realization of the educational process in order to teach course participants and students ways of coping with existence in a complex economic reality (Aldrich and Martinez 2001). [51]

The number of the aforementioned definitions of entrepreneurship shows a great number of aspects of this phenomenon. Entrepreneurship is a concept that is most commonly understood either as an organized process of activities that, in given conditions, is oriented to the use of an innovative idea in order to generate profits on the market or as a group of features describing specific ways of human behavior.

Some authors attempt to mutually combine the aforementioned definitional aspects. For example, Tarkowski (2003) defines the substance of individual entrepreneurship using the following formula:

$$E = f(M, F, K, A), \quad (1)$$

where: E – entrepreneurship, M – motivation, F – features of personality that are conducive to entrepreneurship, K – interdisciplinary knowledge, and A – action.

If entrepreneurship is understood as a feature, then the enterprising individual is characterized by (Strojny 2007; Baker, Gedajlovic, and Lubatkin 2005):

- need of success,
- inner controllability,
- high intellectual capabilities.

Moreover, an enterprising individual is immune to the influence of others and, thanks to creativity and an ability for fast learning is able to cope with difficult situations. The aforementioned attributes of entrepreneurship manifest themselves in the professional and non-professional activity of an enterprising individual and together they are the core of the enterprising attitude.

Glinka (2008) and Handzel (2007) attempted to characterize an enterprising individual by attributing the following features to him/her:

[52]

- need for achievements,
- readiness for taking over the initiative,
- ability to tolerate uncertainty in making decisions and the tendency to take a risk,
- ability to conduct a reliable market analysis and forecast,
- spreading enthusiasm and commitment among others,
- perception and use of opportunities,
- dynamism, activeness and innovative approach.

Entrepreneurship is also characterized by expansiveness, understood as a willingness to match the best and the strongest, and setting ambitious goals in order to gain higher profits.

The aspect of origin of enterprising features is very interesting from the point of view of the entrepreneurship theory. Theoreticians and pragmatists of the entrepreneurship phenomenon attempt to make assumptions about whether entrepreneurship is an inborn feature or whether it is acquired in the process of human life (Schick et al. 2002).

Nowadays, a belief prevails that a person does not have inborn entrepreneurship and acquires it only thanks to education, own experiences and interpersonal relationships. According to P. Wachowiak (2007), the shaping of enterprising attitudes is a very complex and difficult task. It requires many efforts from the person who wants to be enterprising and from other people who have an influence on him/her. Nevertheless, the enterprising attitude can be shaped. It is only a matter of willingness and knowledge of how to do it.

J. Strojny (2007) described the process of shaping the enterprising attitude and emphasized the role of micro and macro environment. Society educates and socializes an individual by values, norms and models and this eventually leads to shaping an individual hierarchy of values and needs. In turn, these manifest themselves in actions that are taken by an individual.

In his deliberations, Tarkowski (2003) indicates a certain type of social entrepreneurship. Its essence is defined by the following formula:



$$SE = f(A, M, C, P, R), \quad (2)$$

where: SE – social entrepreneurship, f – function, A – social attitude towards entrepreneurship and entrepreneurs, M – personal models, C – economic conditions, P – social policy, R – legal regulations.

[53]

The author defines the main sense of social entrepreneurship as a function of attitude, economy, social policy and law. Social attitudes enable the creation of a good or bad atmosphere for entrepreneurs (Shavit and Yuchtman-Yaar 2001). It is determined by many factors, such as: educational system, social and economic system, religion, culture and social aspirations (Spencer and Gomez 2004).

The system of student education seems to be the key factor. It is usually a group of very creative, active, dynamic and open-minded individuals. It is often characterized by ambition and courage. The students have the greatest potential in the development of modern economy. It is they who have the chance and need for realizing their dreams of being entrepreneurs.

The aforementioned groups of features and behaviors are usually similar among many enterprising individuals. However, they can vary in terms of field of activity, motivation, financial risk that is taken, the need for security and attitude towards ownership. These criteria were used to create a typology of enterprising individuals (Tarkowski 2003).

There are six main types of such individuals, i. e.: enterprising manager, entrepreneur, social activist employee, activist and criminal.

- The Enterprising manager acts in the field of organizations management. His/her main acting motive is the need of power and promotion without taking any financial risk and he/she feels safe because of the fact that he/she manages someone else's money.
- The Enterprising entrepreneur runs his/her business activity that is oriented to gaining profit and risks his/her own wealth. The Entrepreneur possesses enterprising features and takes enterprising actions.
- The Enterprising employee is present in every sector of the economy. He/she desires to achieve success in an organization, values approbation of others and accepts moderate risk. The

Enterprising employee values the need of safety more than financial profits.

[54]

- The Entrepreneur activist acts, among others, in politics, sport, education, public health service. He/she is driven by career and tries not to take any risk in his/her enterprises.
- The Enterprising criminal acts in almost every possible field of activity. He/she is oriented towards a rapid and often unfair profit. The Enterprising criminal has a strong sense of real ownership and is often distinguished by the lack of ethical values.

From the point of view of the issues considered in the presented article it can be assumed that two types of the aforementioned enterprising individuals play the key role in business – enterprising manager and enterprising entrepreneur (McDougall and Oviatt 2002).

Therefore, it is important to mention that external factors have a significant influence on shaping enterprising features and attitudes mainly in the two fields indicated above. The social, institutional, cultural and, in particular, the research environment in which an individual is functioning plays extremely important role in the development of his/her enterprising attributes. They also affect innovative enterprises oriented to success that are undertaken by him/her (Teal and Hofer 2003).

However, the external environment has both positive and negative influences. Theory and practice are full of opinions that block enterprising attitudes (Acs et al. 2004). Such myths functioning in the environment contribute to slowing down and impeding the development of entrepreneurship in the micro and macro environment. However, these myths are easy to explain and challenge.

These are the most commonly recalled myths (Bratnicki, Dyduch Gabryś 2007):

- one has to be born an entrepreneur, therefore enterprising behavior cannot be learnt (Watson 2010),
- an enterprising individual can be distinguished by some specific features creating a standard profile,
- enterprising individuals are vigorous, lonely wolves who cannot cooperate with others and try to do everything on their own,



- enterprising individuals are people who pursue power and the ability to control others,
- entrepreneurs are driven only by money, only rapid bonuses count.

[55]

To conclude, the aim of educational activities taken by academic centers should be focused on elimination of myths functioning in local environments concerning entrepreneurship as well as showing beliefs stimulating enterprising attitudes. Realization of such a direction of activities by higher education institutions can be carried out by preparing students to adopt enterprising attitudes as a result of the implementation of modern didactic tools, namely business simulation games, into their educational system (Mueller et al. 2008).

BUSINESS SIMULATION GAMES AS A STUDENTS' EDUCATION METHOD

Research on modern students' education methods and techniques proves that education based on practical usage of knowledge and training in a target activity environment is the most effective. Depending on the discipline, an environment can have real character, i. e. it exists in reality, or a virtual character, i. e. it comes into being through simulation of real phenomena. In many fields of activity, such as business, the usage of simulation games is one of the most popular ways of education.

The idea of using business simulation games (BSG) is not new. These kinds of games have been used in business education since 1950. In conjunction with the rise of case-based approaches (Bransford et al. 1990) and experience-based learning theories (Wolfe 1993), they have created a new concept of business teaching using experimental methods.

Simulation games reflect a selected fragment of reality with a specified precision. The better the reality imitation in a game is, the more the phenomena and higher level of relations complexity between them are encompassed by its scenario. It enables faster and later transfer of the experiences of game participants directly to their target work environment.

[56] Simulation games are considered to be the most interesting and the most engaging forms of education. According to Nemerow (1996, 365), 'Although playing games in the classroom does not solve all of the problems with education, it can be a useful tool, one of many different methods and techniques used to involve students with their learning.' A well-designed game results in the fact that its participants are so strongly engaged that they feel as if they were in a real world. The game becomes a real and profound experience on the basis of which they learn new behaviors, skills and competences in specific cases that may occur in the real world.

According to Faria (1998) in 1998 in the United States there were more than 200 business games in use at more than 1,700 universities. Today the number of games is probably much higher. Such great popularity of simulation games in business education in the USA results from the practical implementation of their results in reality.

The following list presents the advantages of BSG used as a didactic tool:

- interesting way of learning, because the students may gather or examine the knowledge while playing the game,
- acceleration of the learning process through the active individual engagement of players,
- possibility to observe progress in the development of skills and improvement of qualifications,
- connecting the knowledge from different areas of business,
- strong motivation of the game participants towards active learning instead of passive receipt of lectures' content,
- shaping the skills of knowledge usage in practice,
- interactive character that enables players to quickly obtain information about the results of their decisions.

Research on the usage of simulation games in students' education proves that a well-designed game should actually reduce the class time needed to teach a particular concept (Heineke and Meile 2000).

The aforementioned didactic tool also has certain disadvantages, a list of which is presented below:



- the game scenario is a model of reality, that means it is created with some simplifications,
- decisions in the simulation game are made without any responsibility, the game's outcomes don't influence the situation (i. e. financial) of the player or other people in the real world,
- the game describes only some chosen aspects and phenomena from reality, so education is limited only to this area of knowledge or kind of skills which has been taken into consideration in the game scenario,
- the players in most cases are mature people who treat the game rather as an entertainment than as education,
- because of the lack of responsibility for decisions and perceiving the game as a fun, behaviors of game participants may differ significantly from their behaviors in real life.

[57]

According to Feinstein (2002), the disadvantage of simulation games is caused by the fact that 'the participants cannot observe the impact of those decisions on competitors and of the external constituencies until a round in the business game is completed, neither can the participants representing different companies interact with each other during the decision round in the game.'

There are two types of games: open and closed. The main purpose of the closed games is to transfer knowledge. Their result is known from the beginning. The participant of such a game knows the way of achieving a planned result, and the game itself is supposed to prove that such a solution allows that goal to be reached. On the other hand, the final result of the open games is not known and their course is not strictly defined. The result of the game depends on its participants and their actions and decisions. Such a game has a dynamic character because it sometimes allows one to obtain unpredictable results. The open games play a particularly important role in shaping those attitudes that are the subject of the participants' education, e. g. the basics of entrepreneurship.

These are the potential results of game participation:

- evaluation of the correctness of business solutions (business decisions) or verification of the theoretical knowledge in practice,

[58]

- sensitivity evaluation of game outcomes on changes of business decisions taken,
- knowledge gathering during playing,
- the usage of knowledge from different areas of business (e. g. finance, marketing, human resources, other resources).

The place of simulation games in the area of education depends on the purpose of their usage. Should the game be used to arouse students' interest in a given subject and indicate the most important issues from a selected area of knowledge, then it is necessary to start implementing it from the very beginning of the education process. In cases when the game is used as a tool for shaping desired features and behaviours, the right time of its usage is the moment when participants already have some knowledge but cannot use it properly. However, if the game is supposed to verify possessed knowledge, possibility of its implementation or other skills such as analytical thinking or working against the clock, it should be used at the very end of the education process.

B S G S enable their participants to acquire the following skills:

- the usage in practice of the business rules known from the theory,
- strategic and analytical thinking,
- ability to work in a team,
- interpersonal communication,
- working in the conditions of hard competition and under time pressure,
- effective activity in the situation without full information.

The success of usage of the simulation game as an education tool depends on actions taken throughout the entire cycle of its life. The cycle consists of three stages: game project, scenario realization and evaluation of game results. The game project stage plays a key role in the success of the whole education process based on a simulation game. Actions significantly affecting the possibility of achieving a target goal of such a type of education during that stage include:

- identifying the proper area in which it is possible to implement the simulation game;



- indicating potential game participants;
- indicating the proper moment of game implementation in the whole cycle of education;
- defining game character, i. e. whether it is the key element in the process of education or its supplementation;
- indicating technical possibilities of game realization by selection of proper technologies, usually information technologies, as well as the way of visualizing of the game course and results;
- creating a game scenario that includes established education goals (such as defining business models used and working algorithms, time and the precision of imitation of reality).

[59]

The following factors decide the success of usage of the game as a didactic tool during the stage of game scenario realization:

- acquainting the game participants with the goal of the game,
- clear presentation of game rules,
- presentation of the instruction manual of application for realizing the game (description of user interface),
- the proper division of game participants into groups (type of groups and number of participants in every group) which, depending on the game character, will cooperate or compete with each other,
- type and level of involvement of a game arbiter in the course of the game.

During the last stage of the life-cycle of the game, i. e. the stage of result evaluation, it is necessary to take into consideration the following activities that allow one to achieve success:

- general assessment of the game course, its results and evaluation of level of goal or goals achievement by the arbiter,
- a profound analysis of the acting strategy of individual game participants and the effect they have on the game result conducted in a direct contact between the arbiter and the participant,
- actions self-assessment carried out by every player leading to developing better and better decisions in the future (the next game stage).

The participation in the game also allows one to identify certain enterprising attitudes of the players. These attitudes encompass:

[60]

- tendency to take a risk for potential future benefits,
- leadership,
- determination to reach business goals,
- creativity and innovative approach,
- attitude to development of own skills and gaining vocational experiences,
- willingness to cooperate with others in business activity.

It is widely acknowledged that the usage of simulation games in business education has a huge potential. Faria and Wellington (2004) surveyed the usage of simulations among the business faculty members across all disciplines among member schools of the American Association of Collegiate Schools of Business. He reports that among 1,085 respondents, 30.6% were current business game users, 17.1% were former game users, and 52.3% were never-users of business games. Simultaneously, their high effectiveness in the education process is emphasized. According to research carried out by Trapp et al. (1995) among students of the Agricultural Economics Department of Oklahoma State University, simulation games were given an average mark of $M = 6.72$ with a standard deviation $SD = 0.67$. The next ones were the case analysis ($M = 5.55$ and $SD = 0.7$), experimental education ($M = 5.39$ and $SD = 0.54$) and traditional lecture ($M = 5.32$ and $SD = 0.47$).

The aforementioned data prove that simulation games can be used as an effective tool in students' education, particularly in the field of entrepreneurship.

ANALYSIS OF BSG USEFULNESS IN SHAPING
ENTERPRISING ATTITUDES ON THE BASIS OF
EMPIRICAL RESEARCH

The Purpose of the Research

The main goal of the conducted research was assessment of the usefulness of simulation games in education. The authors of the present article have focused particularly on assessment of the usefulness of simulation games in shaping enterprising attitudes. Another goal was



the examination and presentation of opinions concerning the usefulness of simulation games in shaping enterprising attitudes.

The research was conducted in order to gain knowledge about opinions of students participating in the simulation game within the scope of possibilities of usage of BSG in shaping enterprising attitudes. The authors of the research assumed that the questionnaire would be conducted among a group of individuals who actively participate in the simulation game. The questionnaire would be filled out directly after the ending of the game.

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The research conducted in the International School for Social and Business Studies in Celje, Slovenia, was realized within the framework of the Leonardo da Vinci 2010-I-PLI-LE 003-10279 project. The main idea of the project assumes that the research should be carried out in four centers: Slovenia – Celje, France – Pierre Mendès France University, Spain – University of Alicante, and Poland – College of Enterprise and Administration in Lublin. The article contains results from the first stage of research from Slovenia which will be compared with the results from other centers in the future.

Research Method and Tools

The research method that was used was a questionnaire. It was created on the basis of the conducted literature survey and it contained a group of enterprising features. Such a type of tool was selected because of the possibility of reaching a larger research group, specifically 45 persons in Celje (Slovenia), in a fast and anonymous way. The authors have prepared the questionnaire in the form of a printout to be filled out individually by the respondents.

The questionnaire consisted of 11 questions, 8 of which concerned the issues of simulation games and their role in shaping enterprising attitudes. Three additional questions were attached to a certificate characterizing the respondents. The main part of the questionnaire was divided into two research fields. One of them included the assessment of simulation games as an education tool (4 questions). Another concerned the assessment of possibilities of BSG usage in education, oriented to shaping enterprising attitudes (4 questions).

The questions were closed and of a single or multiple choice charac-

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ter. The scale of answers encompassed four levels: very important (very significant), important (significant), not very important (not very significant) and unimportant (insignificant). The article does not contain detailed statistical analysis; this will be conducted after all of the scheduled survey sessions have been performed. However, the article does contain information on the percentage of participation illustrated in columnar diagrams and based on integrated data (cumulated results from the very important/very significant column and the data from the important/significant column). The purpose of such a combination during this stage of the analysis was to visualize tendencies in opinions concerning the usage of simulation games in shaping enterprising attitudes in a better way.

Research Sample

The research was carried out on 5th July 2010 at the International School for Social and Business Studies in Celje on a group of 45 persons participating in classes within the framework of the Summer School. Every respondent took part in a simulation game and had an opportunity to express their opinion in the research questionnaire directly after the end of the game. Therefore, the answers provided by the respondents encompassed experience gained from real participation in the simulation game.

41% of the respondents were women while 59% were men. The majority of the respondents (59%) recognized themselves as enterprising individuals. More than a half of the respondents had not run their own business, but they confirmed that members of their families were entrepreneurs. Almost $1/4$ of the surveyed were willing to establish their own company in future. The large number of respondents (71%) stated that the usage of simulation games in education may contribute to increasing their chances on the labor market.

Results

According to the participants surveyed, the particularly significant features of enterprising attitude (table 1) are: innovative approach and creativity (94%), determination in achieving business goals (93%), abilities concerning managing soft and hard resources (92%) and nego-



TABLE 1 Features which an entrepreneur should possess (%)

Feature	(1)	(2)	(3)	(4)
Finance profit orientation	29	59	12	0
Career need	18	41	41	0
Power need	24	41	29	6
Fame and acknowledgement need	18	53	24	6
Will to take a risk	59	41	0	0
Enlargement of once fortune	24	59	18	0
Skills of management of human, financial resources	35	57	8	0
Negotiation skills	50	41	9	0
Innovativity and creativity	59	35	6	0
Inner motivation	65	29	6	0
Determination to achieve the business goals	53	40	7	0

[63]

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

tiation skills (91%). The following features were also found significant: financial orientation (88%), increasing incomes (83%), willingness to take risk (100%) and needs connected with the professional career (59%).

The respondents were also supposed to assess the impact of simulation games on shaping enterprising attitudes. As many as 83% of the respondents stated that the following enterprising features shaped during simulation games are important: an opportunity to develop competences in new fields of business (which can have an impact on creativity and innovative approach in business) and creation of the need to achieve market success (table 2). A large number of respondents (88%) mentioned the importance of shaping attitude of players to take risk.

The aforementioned answers correspond with the question concerning attitudes that can be identified through participation in the BSG (table 3). The players' tendency to take risk was the most commonly indicated (95%), because it seems obvious that many people find it easier to make risky decisions on the level of the simulation game. Determination in achieving business goals (91%) and the possibility to display leadership features, which were found crucial for

TABLE 2 The significance of features of the business simulation game that allowed for shaping the entrepreneurial pose (%)

Feature	(1)	(2)	(3)	(4)
Inspires to establish and run own business	18	47	35	0
Makes aware of the gap in the knowledge and skills in business area	24	53	24	0
Forces the need to complete lacking business knowledge	18	65	18	0
Shapes competences in different business areas	12	71	12	6
Generates the need of success reaching	24	71	0	6
Verifies the tendency to take a risk	35	53	12	0

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

TABLE 3 The importance of poses that may be identified by participation in the business simulation game (%)

Pose	(1)	(2)	(3)	(4)
Tendency to take a risk	33	62	5	0
Disclosure of leadership features	19	76	5	0
Determination to reach the business goals	48	43	5	5
Creativity and innovativity	24	38	33	5
Attitude to personal development	19	57	19	5
Cooperation orientation	19	71	10	0

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

an entrepreneur, during the game (95%) were assessed equally high. However, it seems to confirm an assumption that enterprising features might be displayed, shaped or improved during education with the use of simulation games.

The Selection of two answers concerning the skills that might be shaped when participating in simulation games (table 4) was found obvious for an respondents: strategic thinking (100%) and information analysis (100%). Slightly less frequently indicated were the following abilities: teamwork (95%), possibility of confronting theoretical knowledge with business practice (90%), interpersonal communication (86%) and working in conditions of strong competition (86%). The following abilities were also found important: possibility of fast



TABLE 4 The importance of skills that may be shaped by participation in the business simulation game (%)

Skill	(1)	(2)	(3)	(4)
Implementation the theoretical knowledge in business practice	33	57	10	0
Strategic thinking	52	48	0	0
Information analysing	48	52	0	0
Team working	52	43	5	0
Interpersonal communication	29	57	14	0
Fast adaptation to the market requirements	19	62	19	0
Working under time pressure	14	62	14	10
Solving crisis situations	19	52	29	0
Working in the conditions of hard competition	24	62	14	0

[65]

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

adaptation to market needs (81%), working against the clock (76%) and necessity of coping with crisis situations (71%). The indicated skills are also reflected in the assessed structure of enterprising attitude: the most frequently indicated were management skills (94%) and negotiation skills (91%), determination in acting (93%) as well as innovative approach and creativity (94%).

When assessing the results of simulation games (table 5), the respondents' evaluation of conscious broadening of knowledge, confronting it with practice, implementing it in various fields of business and transferring it among the game participants (indications between 76% and 86%) reached very high, almost identical, scores.

However, the respondents also indicated some disadvantages connected with usage of simulation games in education (table 6). The most significant disadvantages indicated by the most numerous group of the respondents were: simplification of reality in simulation games (76%) and hardware requirements (67%). However, these limitations can be overcome on the level of scenario construction by gradual modernization of the hardware platform. More than a half of the respondents are anxious about the limited possibilities of using simulation games in education (58%), different behaviors of the participants towards the real world (58%) and treating the game just as an entertain-

TABLE 5 The importance of results that may be achieved by participation in the business simulation game (%)

Result	(1)	(2)	(3)	(4)
Making one aware of lack of knowledge in particular business areas taken into account in the game	24	62	10	5
Verification of the theoretical knowledge in practice	19	67	14	0
Current knowledge complementation during playing	19	57	24	0
Using of knowledge from different areas of business (finance, marketing, human resources, other resources)	33	52	14	0

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

TABLE 6 The significance of disadvantages of the business simulation game as a didactic tool (%)

Disadvantage	(1)	(2)	(3)	(4)
Considerable simplification of reality	19	57	19	5
Lack of player's responsibility for his/her decisions	19	38	29	14
Necessity of engagement of area and hardware resources	10	57	24	10
Limitation of education to the scope of the game	10	48	38	5
Game is treated rather as an entertainment than as education	0	48	19	33
Behaviours and poses of game participants differ significantly from their behaviours and poses in real life	10	48	38	5

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

ment (48%). These concerns probably result from incomplete awareness about the possibilities offered by participation in the game. Most of the adults are rather familiar with more traditional forms of education, such as lectures. It is a static form for a participant that gives him/her a certain kind of safety. On the other hand, passive behaviors in the game are either impossible or are immediately reflected in its results. It is possible that anxiety about treating the simulation game as an entertainment results from a certain simplification that an adult should be treated seriously. Therefore, a different form of education that stimulates activeness and creativity (namely simulation game) is often treated with anxiety and sometimes can even be rejected.

The participants also indicated advantages of simulation games (table 7). The maximum score (100%) was gained by the statement that



TABLE 7 The significance of advantages of the business simulation game as a didactic tool (%)

Advantage	(1)	(2)	(3)	(4)
Interesting way of learning	57	43	0	0
Recognition of market rules	33	48	14	5
Interdisciplinarity	24	67	5	5
Motivates the game participants to active learning	67	29	5	0
Shapes the skills of knowledge usage in practice	38	43	19	0
Enables players to quickly get a feedback on the results of their decisions	57	33	10	0

[67]

NOTES Column headings are as follows: (1) very important (2) important, (3) not very important, (4) not important.

simulation games are an interesting form of education. The remaining indicated advantages were also: interdisciplinarity (91%), possibility of gaining fast feedback about results of decisions made (90%) as well as recognition of market rules (81%) and possibility of shaping the skills in practice (81%). Motivation of the participants for active learning during simulation games reached the score of 96%.

In the context of the aforementioned enterprising features, interdisciplinarity seems very important, as it may create an opportunity for shaping abilities of soft and hard management. Motivation of the participants to active learning which can result in shaping of teamwork skills, displaying leadership abilities or motivation for self-realization is also considered important. An advantage, in the form of fast feedback concerning the results of decisions taken, has great significance in shaping the ability for correct interpretation of market signals.

To recap, the conducted research indicated the following features of simulation games which have great impact on their usefulness in forming enterprising attitudes: shaping innovativeness and creativity, assessing the ability to take risk, shaping determination in achieving set goals, making decisions based on financial motivation criteria, improving hard and soft managerial skills.

CONCLUSIONS

To conclude, it is necessary to emphasize that results of the research conducted among students indicate high interest in BSG as a form of

[68] education. The majority of respondents perceive the advantages of education based on participation in simulation games and justifying the use of such a tool in education oriented to shaping enterprising attitudes. It can be assumed that BSG are perceived as an interesting and desired form of gaining experience that can be used in later professional practice.

However, according to the authors, the results of the conducted research allow for some suggestions to be made, the purpose of which is to increase an effectiveness of the use of BSG in education. These suggestions will be addressed to two subjects, i. e. individuals teaching with the use of BSG and to designers of such games.

The research results prove that almost half of the respondents perceives the game only as a form of entertainment, not a form of education. It is also surprising that $1/4$ of the respondents do not treat participation in the game as an opportunity for gaining knowledge and treat the game only as a way of its testing. In both cases, the desire for changing such a way of perception of simulation games is a very important task for a teacher who has direct influence on shaping attitudes of students towards education with the use of such games. His/her actions should be focused on preparing students for the classes in a proper way and on evaluation of BSG participants that would encompass results obtained throughout the game. The teacher should indicate the possibility of personal development through participation in the game and make participants aware of the profits resulting from that form of education. His/her task should also be a purposeful and conscious use of BSG at the proper level of education (during the early stage – education, during the final stage – verification of skills and knowledge) as well as adapting the complexity of the game to competences of its participants.

Another important suggestion addressed to teachers concerns the need for current monitoring of adequacy of the games to market reality and proposing their updating for models imitating the current or predicted market situation. The use of an obsolete (outdated) model can lead to permanent and negative opinion of the game participant about this form of education.

In order for the simulation games to meet the requirements im-



posed for the didactic tools, they have to be extremely precise in imitating market realities. However, $\frac{3}{4}$ of the respondents claim that simulation games simplify the reality too much. This fact is a source of suggestions for a subsequent subject, i. e. game designers, so that business models may be built to more realistically reflect the market situations. Moreover, a properly designed game should allow one to generate results that would show its participants the increase in the knowledge gained during the game in the normal course (during the game).

[69]

Almost $\frac{1}{5}$ of the respondents do not acknowledge the possibility of transferring benefits resulting from participation in the game to actions taken in business practice. The observation that the same number of respondents do not treat BSG as a tool facilitating acquaintance with market mechanisms seems to be particularly significant. These facts might be a hint for the game designers that it is necessary to update the model of reality used in the game, not only in a context of its better imitation (precision of the model) but also adjusting the model to a current market situation (adequacy of the model).

The authors cherish the hope that the obtained research results and suggestions resulting from them will give hints about the lines of the actions that should be taken in the future in order for the simulation games better to prepare students for activity in the field of entrepreneurship.

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Increasing Employability of Graduates

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THIS EMPIRICAL PAPER attempts to shed light on the following question: Does entrepreneurial experience during undergraduate studies influence employability of graduates? The aim of our study was to examine this question in the context of career pathways of graduates of Junior Enterprises (JE). Data were collected from 980 graduates, 587 currently Active JE Members and 393 Former JE Members. The study has shown that the learning experience gained through working in a Junior Enterprise has an impact on the career development of university graduates. The learning and development aspect is also an interesting feature of the assessment procedure. The results seem to provide a good way to confront entrepreneurs with their own qualities and with areas for improvement and discussion. The results also indicate that the positive impact of the system of teaching and learning strategies in a Junior Enterprise on the development of basic skills and personal quality was stronger in Entrepreneurs than in Alumni.

INTRODUCTION

Entrepreneurial experience during undergraduate studies should have a twofold impact on career development: either the graduate decides to become self employed or to find an employment where he or she can implement intrapreneurial skills (Harris and Gibson 2008; Neugebauer 1997). Entrepreneurial thinking is therefore not only a driving force for job creation, competitiveness and growth, but it also contributes to personal fulfilment and the achievement of social objectives. On the one hand, major characteristics like initiative, risk and leadership resemble common basics of the theory of entrepreneurship. As Schmoller (1901) said: 'The one who takes the initiative, bearing risk under private law, is the entrepreneur; he/she is the centre and the

head of the enterprise.’ (Page 413, translation by authors.) Intrapreneurs on the other hand can be described with the words of Pinchot (1985) as ‘[...] any of the “dreamers who do.” Those who take hands-on responsibility for creating innovation of any kind within an organization. [74] They may be the creators or inventors but are always the dreamers who figure out how to turn an idea into a profitable reality.’ (Page 59.)

Junior Entrepreneurs are students who are working for a special kind of training firm, that tries to foster entrepreneurial thinking and acting, called Junior Enterprise. Despite operating in the regular market, Junior Enterprises unlike normal companies are non-profit organisations that are not exposed to all risks of the market. Normally there are few or no fixed costs and the Junior Enterprise office is located at university. This office is free of charge and there is no need for the Junior Enterprise or the Junior Entrepreneurs to generate a certain amount of turnover or profit. The fostering of entrepreneurial mindsets is one of the main objectives of the Junior Enterprise concept. Thereby students found their own company, and direct it until they finish their studies. The basic principles of a Junior Enterprise – entirely student-managed, non-profit, conducting projects to bridge the gap between university and business – have not changed since the first Junior Enterprise was set up in France, in 1967. Since then the concept of Junior Enterprise has spread not only all over France, but as well to other countries and nowadays even worldwide. In this framework, the purpose of this article is twofold:

- 1 To develop an operational measure of competence development that taps as closely as possible this theoretical construct.
- 2 To examine the validity and reliability of this measure in two well-defined populations, students and graduates of business schools.

CONCEPTUAL BACKGROUND

According to Holland (1985) the decision for a certain career path is built on two different sources. One source states the personality traits the child is born with and the second source includes the close environmental, especially family influences comprising input to the individual.



Holland describes the second source with the personal history everybody in this world has. He says, we are born with a certain animus and are influenced on from the very beginning, especially from our close environment, our family. Parents reward certain things and dismiss others whereby the child is oriented by this 'ranking' set up by the parents. Based on the animus and the parent's influence, children start to figure out about their passions and their aversions towards activities. In the future this nature develops, and by following the interest, particular competences arise and other potential competences become neglected. The alteration of a vague interest into a certain trait comes along with the development of a repertoire of skills and coping mechanisms, which include values as well as self-concepts (Holland 1985).

[75]

His research supports the Social-Cognitive Theory of Career and Academic Interests, Choice, and Performance (Lent, Brown, and Hackett 1994). This means that the expectations about performance in a given field direct interests, induce expenditure and persistence although in the face of obstacles, and thus, lead to experience. Applying this perspective to Holland's E-type, high expectations about entrepreneurial competence, or entrepreneurial self-efficacy, may be a sign of strong entrepreneurial interests and thus, entrepreneurial career prospects.

In following Holland's perspective, our study's attention is addressed to the personality traits, competences and the family of origin of the sample. Questioning the influence of the other key factor in our study, the special context in which our studied sample develops, the Junior Enterprises.

The Concept of Competence

The concept was first mentioned in the Latin language as *competens*, which means capable or qualified (Mulder 2001). In the eighteenth century competences were already implicitly written down in master-assistent learning outcomes. The word competences itself was first described by McClelland (1973) as: 'Components of performance in coherence with clusters of life outcomes.' Since then a lot of definitions of competence have been written down, but still no consensus about the concept has been reached.

[76] Two perspectives are influencing the choice of a definition of competence: an organizational perspective and an educational perspective. In organizational research about competences, the focus is on competences as performance (Swanson and Holton 2001; Kessels and Poell 2001). An example of an organizational definition of competences is: 'a competency is a combination of observable performance dimensions; under which are included individual knowledge, capabilities, attitudes and behaviour, but also collective team, process and organisational abilities, that are attached to higher performances and are giving the organisation a competitive advantage' (Arthey and Orth 1999).

Competences are expressions of behaviour and can be learned, in contrast to personality and intelligence which can't be learned (Delamare Le Deist and Winterton 2005). In an educational context this approach can be very useful, when competences are written down in more detail. The parts that build up a competency can be described and can be helpful by learning a complex competence, step by step (Toolsema 2003).

Measuring Competence Profiles

Competence profiles were created from two different points of view:

- 1 Self-assessment in 15 categories concerning specific skills and competences.
- 2 Learning experience within the JE by self-assessed improvement of the same 15 skills and competences.

The actual evaluation was done by 15 statements that could be rated within a six-point scale ranging from 'totally agree' to 'totally disagree':

- 1 I am good at dealing with people
- 2 I am good at organizing and planning
- 3 I can coordinate tasks
- 4 I have good writing skills
- 5 I can handle technical devices
- 6 I have good communication skills
- 7 I can advance my opinion
- 8 I am good at working together with different people



- 9 I am good at figures
- 10 I can develop alternative plans/scenarios
- 11 I can enthuse people for my ideas
- 12 I have good presentation skills
- 13 I am good at negotiating
- 14 I can delegate tasks to others
- 15 I am good at selling

[77]

Two hypotheses were tested in this study:

- H 1 *There are no significant differences in employability skills level among Junior Enterprise students and Junior Enterprise alumni.*
- H 2 *There are no differences in employability skills level among students of Junior Enterprise alumni and Entrepreneurs.*

METHODOLOGY

This is a descriptive study using a survey method. The scope concentrates on a total of approximately 20,000 people who were interviewed by e-mail for this survey. This sum includes Junior Entrepreneurs and Alumni of Junior Enterprises (JEs). The large number of interviewees is a criterion for a quantitative analysis instead of a qualitative analysis (Ilieva, Baron, and Healey 2002). According to the literature, the methodology used has a deep impact on the response rates of the survey and on the results (Solomon 2001). So, our web-based survey is a multi-form online survey. The respondents receive a link via e-mail and connect directly to the web site, which displays the questionnaire. The URL of the survey form is placed in a covering letter, allowing the respondent to subsequently fill out the questionnaire (Solomon 2001). The e-mails were sent out over the internal databases of the national confederation of each participating country of the JADE network. We consider the web-based survey to be also the best tool to reach the Alumni of the JADE network. Each JE collects the contact information of their former members, so the chance for reaching as many Alumni as possible is therefore the highest using a web-based questionnaire. The study is based on 980 valid responses, 587 of currently Active JE Members and 393 of Former JE Members.

TABLE 1 Distribution of field of studies of the whole sample (%)

Field of studies	Active JE members	Alumni employed	Alumni self-empl.
Business	44	63	49
Economics	9	12	14
Law	4	3	2
Engineering	24	16	16
IT	12	10	12
Medicine	0	0	2
Social sciences	8	6	5

[78]

The field of studies as another qualitative characteristic of the sample is illustrated in table 1. Business and Economics disciplines of the study made up 53 percent of the active Junior Entrepreneur sample, and 59 percent of the Alumni sample, and other study disciplines accounted for the remaining 47 percent, respectively 41 percent. By putting active and former member responses together, the study fields of Business and Economics count for 55 percent.

Almost 50% of the Alumni who are self-employed had previously studied Business, 16% Engineering, 14% Economics and 12% IT. There is a small number of self-employed coming from Law, Medicine and Social Sciences studies. Looking at the Alumni employed we have a similar picture of the study fields. However, compared to the Active JE Members, both groups score higher in studying Business and Economics; 12% more of Alumni employed and 10% more of Alumni self-employed. On the other hand, the rate of Active JE Members studying Engineering is 5% higher than that of the Alumni employed and self-employed, and counts 21%.

RESULTS

Working in a Junior Enterprise gives students the opportunity to test their skills and knowledge under market conditions and encourages them to prevail in a team. These are unique conditions that can not be experienced during a regular academic education. Therefore members of Junior Enterprise should benefit from their experience and enhance competences related to general management and social interaction. Depending on the product portfolio of the Junior Enterprise



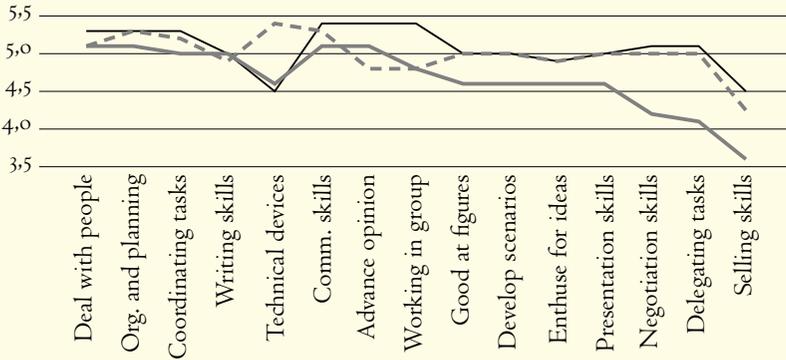


FIGURE 1 Competence profiles in comparison (self evaluated within a six-point Likert scale; black line – active JE, gray line – regular student, dashed gray line – student with entrepreneurial activity)

there could be additional benefits in special competences like figures or technical devices. However, most Junior Enterprise specialise rather in marketing than IT or engineering, so this is unlikely to be true for the whole sample. A first look at the data (figure 1) backs those assumptions, but we will analyse the results in more detail.

Hypothesis 1a

- H0 Junior Enterprise (JE) members do not have a higher competence profile than regular students.
- H1 Junior Enterprise (JE) members have a higher competence profile than regular students.

The results are highly significant and H0 can be rejected for all competences expect ‘Writing Skills’ and ‘Handling of Technical Devices’, where the skills of JE members actually are significantly lower than those of their fellow students. Especially selling skills, delegating tasks, presentation skills, advancing an opinion and group working skills are about ten percent above those of regular students.

Because of these big differences we will look at a second group of students that, like the junior entrepreneurs, has already shown entrepreneurial activities such as founding a company or being in the process of founding one. Basically those two groups are doing the same thing, but in a JE there is more support from the group and

TABLE 2 Competence profiles active JE Members and Regular Students (no entrepreneurial activity so far)

Competence	(1)	(2)	(3)	(4)	(5)	(6)
Dealing with people*	5.27	5.09	3.68%	0.59	0.60	0.000
Organizing and planning*	5.22	5.07	3.12%	0.66	0.86	0.000
Coordinating tasks*	5.18	4.98	4.13%	0.59	0.80	0.000
Writing skills†	4.83	4.98	-2.90%	1.07	0.95	0.000
Technical devices†	4.71	4.87	-3.04%	1.32	1.7	0.001
Communication skills*	5.27	4.87	8.09%	0.57	0.75	0.000
Advancing an opinion*	5.32	4.85	9.58%	0.52	0.82	0.000
Working in groups*	5.34	4.85	9.88%	0.52	0.98	0.000
Good at figures*	4.96	4.67	5.39%	1.03	1.47	0.000
Developing scenarios*	5.04	4.66	7.62%	0.65	0.85	0.000
Enthusiasm for ideas*	4.87	4.62	5.16%	0.84	0.93	0.000
Presentation skills*	5.10	4.58	10.60%	0.77	1.07	0.000
Negotiating skills*	4.58	4.26	6.57%	1.03	1.17	0.000
Delegating tasks*	4.65	4.14	10.18%	1.10	1.39	0.000
Selling skills*	4.48	3.83	13.19%	1.21	1.55	0.000

NOTES Column headings are as follows: (1) mean active JE members ($N = 587$), (2) mean regular students ($N = 8290$), (3) skill advantage, (4) variance active JE members, (5) variance regular students, (6) p -value. * JE member significantly higher, † JE member significantly lower.

the chance to learn from more experienced members. Therefore junior entrepreneurs should have at least some skill advantage compared to students regularly founding a company.

Hypothesis 1b

H0 *Junior Enterprise (JE) members do not have a higher competence profile than regular entrepreneurial students.*

H1 *Junior Enterprise (JE) members have a higher competence profile than regular entrepreneurial students.*

The results show that regular students who have already shown entrepreneurial activity are much closer to members of JEs, but there are still highly significant differences. The entrepreneurial active students are able to close the gap at skills rather directly connected to



[80]

TABLE 3 Skill profiles of JE members and regular entrepreneurial students

Competence	(1)	(2)	(3)	(4)	(5)	(6)
Dealing with people*	5.27	5.07	3.99%	0.59	0.62	0.000
Organizing and planning	5.22	5.24	-0.36%	0.66	0.75	0.381
Coordinating tasks	5.18	5.17	0.25%	0.59	0.78	0.816
Writing skills†	4.83	4.99	-3.26%	1.07	1.01	0.003
Technical devices†	4.71	5.25	-10.70%	1.32	1.04	0.000
Communication skills*	5.27	5.07	4.02%	0.57	0.67	0.000
Advancing an opinion*	5.32	5.10	4.50%	0.52	0.64	0.000
Working in groups*	5.34	4.89	9.02%	0.52	1.07	0.000
Good at figures	4.96	5.00	-0.76%	1.03	1.18	0.583
Developing scenarios	5.04	5.05	-0.12%	0.65	0.86	0.976
Enthusiasm for ideas	4.87	4.91	-0.84%	0.84	0.83	0.462
Presentation skills*	5.10	4.96	2.78%	0.77	0.92	0.004
Negotiating skills	4.58	4.54	0.77%	1.03	1.23	0.263
Delegating tasks*	4.65	4.34	6.16%	1.10	1.40	0.000
Selling skills*	4.48	4.25	4.59%	1.21	1.67	0.001

NOTES Column headings are as follows: (1) mean active JE members ($N = 587$), (2) mean students entrep. activity ($N = 567$), (3) skill advantage, (4) variance active JE members, (5) variance students entrep. activity, (6) p -value. * JE member significantly higher, † JE member significantly lower.

activities needed in order to found and manage a company, such as organizing, coordinating, figures, developing scenarios, enthusing for ideas and negotiating. However at competences more related to social interaction, such as dealing with people, communication, advancing opinions, working in groups, JE members still have a significant advantage. Moreover there are significant advantages at delegating and selling.

Interesting is the fact that the skill advantage is especially significant where social interaction is relevant. Taking into account that JEs are focused on team work, and compared to typical start-ups are rather large organisations, this result is a logical consequence.

Nevertheless, we want to take a closer look at the reasons for the observed differences between junior entrepreneurs and regular students. Possible factors for the skill advantage could be the learning

[81]



FIGURE 2 Comparison of skill advantage of JE members against regular students to self-evaluated skill improvement because of JE membership (both measured with a six-point Likert scale; for skill improvement 3,5 is the zero point on the scale; gray line – skill advantage JE, dashed gray line – skill improvement)

experience in the JE or differences in the samples, such as the field of study, sex or country of origin.

Hypothesis 2

- H0 *High skill advantage of Junior Enterprise Members is not positively related to the corresponding learning experience in the Junior Enterprise.*
- H1 *High skill advantage of Junior Enterprise Members is positively related to the corresponding learning experience in the Junior Enterprise.*

A first look at the data shows that the lines for skill advantages and skill improvement are corresponding to a certain degree, but we have to analyse the data in more detail for verifiable statements.

DISCUSSION AND FURTHER RESEARCH

This article has demonstrated that the learning experience gained through working in a Junior Enterprise has an impact on the career development of university graduates. The learning and development part is also an interesting feature of the assessment procedure. The results seem to provide a good way to confront entrepreneurs with their own qualities and with areas for improvement and discussion. Since it is a learning and development tool, and not a ‘test,’ it should also be

communicated in that way, not in terms of deficits, but in terms of areas for further improvement. Therefore it is important to know which competences the entrepreneurs themselves consider important for entrepreneurship in their own context. The present study gives a picture that the system, along with the teaching and learning strategy implemented in a Junior Enterprise, indirectly equips students with basic skills, thinking skills and resource management competence. The results also indicate that the system and teaching and learning strategies in a Junior Enterprise had a positive impact on development of basic skills and personal quality more strongly in Entrepreneurs than in Alumni. Judging by the result, it can be concluded that a Junior Enterprise in Europe has succeeded in equipping its students with adequate employability skills to enter the world of work.

[83]

The results on the whole indicate that students in a Junior Enterprise have acquired a slightly higher degree of employability skills during their education and training program. The System and teaching and learning strategies in a Junior Enterprise have equipped their students with skills needed for the current workplace environment, especially industrial sectors that need both technical as well as employability skills.

Since the impact for entrepreneurial learning concepts is such that we cannot say if either this group or the other group has a more entrepreneurial personality profile, we will compare in future studies JE Entrepreneurs with the Regular Entrepreneurial Students. We are going to compare competence profiles and personality profiles. JE Entrepreneurs should be more advanced in competences than regular Entrepreneurial Students, since JE Entrepreneurs are Alumni of JES, who made themselves self-employed after their studies, respectively, after a couple of years working for a company. On top of that they have the additional years of experience gained during the time at the JE. So, basically both groups are doing the same, working self-employed, with the difference being that JE Entrepreneurs have a couple of more years of experience. Concerning the personality profiles, the differences should not be too great, since both analysed sample groups show highly entrepreneurial activity.

The most important conclusion is that the Entrepreneur competence profile is reliable and valid and has been of great value for the

(starting) entrepreneurs for whom these competences are crucial. The theoretical recommendation is to conduct further research to determine the predictive validity.

[84]

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Entrepreneurial Learning and Learning Strategies of the First Year Business Students in Higher Education

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THIS QUALITATIVE STUDY EXAMINED entrepreneurial learning and learning strategies of international business students in Finland. The main aims of the study were to find out what the business students learn in terms of entrepreneurship and what strategies they use in their learning during the first year studies. In terms of generic competences, the findings indicated that the most common learning outcomes are the learning competences as well as the communication and social competences. The learning outcomes of subject-specific competences are not only the acquisition of the knowledge of business operations and entrepreneurship, but also different kinds of skills for entrepreneurship. Further, the most commonly used learning strategies are different cognitive strategies, yet also metacognitive learning strategies are used by the first year students.

INTRODUCTION

Often, entrepreneurial learning concerns knowledge, skills, abilities and attitudes of actual or potential entrepreneurs (e. g. Erikson 2003), yet there are multiple meanings in what different scholars mean by entrepreneurial learning. Entrepreneurial learning can be related to the learning of current entrepreneurs (Cope and Watts 2000; Minniti and Bygrave 2001; Politis 2005; Ravasi and Turati 2005; Sullivan 2000; Taylor and Thorpe 2004) or even to portfolio entrepreneurs (Huovinen and Tihula 2008). Further, entrepreneurial learning can also be related to people whose careers have included significant entrepreneurial attainment (Rae 2005). All in all, entrepreneurial learning concerns the development of entrepreneurial capabilities through life and work

(Rae and Carswell 2001; Gibb 2005). However, recent research has concentrated more and more on entrepreneurial learning in higher education and then it refers to the entrepreneurial learning of undergraduate, graduate or postgraduate students (e. g. Leskinen 1999; Paajanen 2001; [86] Ristimäki 2004).

Even though entrepreneurship education has been stimulated and supported in many ways in formal education during the recent years, yet there are also scholars who claim that the present educational system at the university level cannot develop students' motivations, competences and skills related to innovations and entrepreneurship. In addition, there is a claim for the need for didactic changes, pedagogic changes and contextual changes (Blenker et al. 2008, 50; Kirby 2004, 510). In any case universities are faced with the challenge of finding innovative ways of teaching entrepreneurship whilst retaining rigorous academic standards of measurement and assessment.

This study explored the entrepreneurial learning of the first year international business students in a university of applied sciences in Finland. The aim was to understand what the students learn in terms of entrepreneurship as well as what strategies they use in their learning. In this study the concept of entrepreneurial learning includes enterprising competences of any potential individual, as well as entrepreneurial skills and competences which are required in owning and running a business. The study was implemented by self-assessment tasks in which the students were encouraged to recall and describe their most significant learning experiences related to entrepreneurial learning during their first year.

RESEARCH TOPICS AND QUESTIONS

Outcomes of Entrepreneurial Learning in Higher Education

The goals of entrepreneurship education can differ: (1) establishing a company or improving the management of SME's, (2) increasing the knowledge related to entrepreneurship and business operations, and (3) increasing the use of entrepreneurial methods (Paajanen 2001; Paasio and Nurmi 2006). It is also important to note that entrepreneurship can be channelled through other means than starting a business. Entrepreneurial behaviour and intrapreneurship without business owner-



ship relations offers a definition of entrepreneurship which suits well as the basis for entrepreneurship education in the schools according to their curricula. Therefore entrepreneurship education in higher education does not mean a straightforward aim to contribute to the development of the amount of enterprises, but to the individuals' entrepreneurial behaviour or activity as well (Gibb 2005; Ristimäki 2004).

[87]

However, reflecting the complexity of entrepreneurship education, Frank (2007) introduces the objectives of the learning outcomes of the National Council for Graduate Entrepreneurship which aim at raising the profile of entrepreneurship and promoting the option of starting a business as a career amongst students and graduates in the UK. Their learning objectives have been categorised according to three different types of learning outcomes: Values, attitudes, and approaches, Generic competences and Business related competences. Further, each of them includes sub-items and their sub-themes which are aimed to be learnt. In other words, the learning outcomes can include values and attitudes, generic competences and subject-specific competences related to business.

Moving on to the entrepreneurship studies in the degree programme of the target organisation of this study, they include both entrepreneurial skills and business skills. Entrepreneurship is seen in the degree programme as a phenomenon to be learnt and to be taught; entrepreneurship as a thing to be learnt requires of the student both theory knowledge and, in particular, applying this knowledge in practice. Entrepreneurship as a phenomenon to be taught refers to the learning of the field-related content in study modules and to active guiding of the student during the learning process. Learning is regarded as interactive and based on the constructive learning concept, but in the early stages of studying, when knowledge structures and meanings are constructed, learning is also based on the cognitive learning concept. The annual theme of the first year studies of the programme is 'Introduction to Business.' Based on that, the first-year learning objectives of generic competences are mainly aimed at learning competences, ethical competences, communication and social competences as well as international competences. In terms of subject-specific competences, the learning outcomes are related to the orientation to business

operations and entrepreneurship as well as the business environment.

[88] In order to conclude this section, it is worth summarising that the learning of entrepreneurial competences includes various skills, knowledge, values and attitudes during the whole study programme. In order to understand how these competences are achieved in the beginning of the programme, this study focused on the first year of the programme, and the first research question was formulated as follows: 'What are the main outcomes of entrepreneurial learning of business students during their first year?'

Various Learning Strategies

Students utilize different ways and means to assist in the acquisition, storage, retrieval and use of information to accomplish a study assignment. Specific patterns of learning activities can be called learning strategies (Vermetten, Lodewijks, and Vermunt 1999, 1). Often, these learning strategies are connected to a certain learning situation and to the task involved (Ruohotie and Nokelainen 2000, 155). The use of learning strategies is personal and habitual and they are also related to the context (Vermetten, Lodewijks, and Vermunt 1999, 1). It can be concluded that the learning strategies can be a potential mediator in the relationship between students' interests and their academic achievements (Soric and Palekcic 2009), and that motivation and self-regulated learning are associated with success in school, and self-regulation is a good predictor for academic achievements (Kuyper, van der Werf, and Lubbers 2000, 181; Scholomeer and Brennan 2006, 81; Lan 1996, 106; Huang 2008, 529).

Although there are various learning strategies introduced by different scholars, there is disagreement among scholars on what learning strategies are exactly and how many of them exist, how they should be defined and categorised. Nevertheless, a number of scholars have agreed on three main categories of learning strategies: cognitive strategies, meta-cognitive strategies, and resource management strategies. (e.g. Pintrich and McKeachie 2000, 40; Soric and Palekcic 2009, 551; Clayton, Blumberg, and Auld 2010, 351).

There seems to be a common pattern of the first year students' learning strategies in higher education. According to Vermunt and Vermetten (2004, 367) various research findings concerning the first



year students in higher education have repeatedly confirmed an internal structure of learning in different countries. Very similar patterns have existed in those studies; i. e. a meaning-directed learning pattern, a reproduction directed learning pattern, an undirected learning pattern, and an application-directed learning pattern.

[89]

In the target organisation of the study the students are actively encouraged into an independent, self-directed and target-oriented mode of working in their studies. Attention is paid to responsibility, assuring presentation skills, self-expression in writing, and good cooperation abilities. Therefore, with regard to the previous theories and research findings as well as the learning practices of the target organisation, the second research question of this study was formulated as follows: 'What strategies do business students demonstrate to use in their most significant learning experiences of the first year?'

METHODOLOGY

The participants of the study were one group of the first year international business students who were taking an entrepreneurship course at the end of the second semester in a business management degree programme in a university of applied sciences in Finland. During the course multiple meanings of entrepreneurship had been discussed and the students were expected to have a basic understanding of the topic.

The method for data collection was a self-assessment task in which the students were encouraged to recall and describe their most significant learning experiences which relate to entrepreneurship, entrepreneurial behaviour, skills and knowledge during their first year studies. They were asked to write an essay of about one or two pages and describe the learning situations in as much detail as possible. Eventually 18 essays were written and an average essay included two pages of text.

The inductive content analysis of the data had the following phases. First, all the essays were read and all pieces of texts describing the learning situations were selected from the essay of each student. Some of the students had focused on and described various events or learning experiences and their main outcomes, whereas some of the students described, for example, only two or three bigger learning experiences from different perspectives. In any case, the main principle of the anal-

ysis process was that each piece of text was regarded as one learning context which had at least one learning outcome, and it was also described through which activities and how the learning had occurred.

[90] The data were analysed from the points of view of the research questions. First, in order to analyse the learning outcomes, the first-year learning objectives of the degree programme were used as a framework (both the generic competences and business-specific competences) and the data were categorised accordingly. The learning outcomes were identified in the text, which was written either by using the student's own words verbatim or with a couple of exact 'equivalent' words, if the original description was written in a broad way. Some of the experiences were overlapping with each other; however, they were included in the analysis only once, based on what the main focus of the experience was.

Next, in order to analyse the learning strategies, the data were analysed in an inductive way as well. First, the way of learning was identified from each piece of the texts and it was written with a couple of words. Finally, all the learning strategies were categorised according to main categories, which resulted in cognitive, meta-cognitive and resource management strategies. The findings of the learning outcomes as well as the learning strategies are reported by the categories found in the data and, in order to understand how common they were, they are also presented by the frequencies in the ranking order in the tables.

FINDINGS

The Main Outcomes of Entrepreneurial Learning of the First Year Students

The findings related to the learning outcomes are presented according to two categories which were used in the target organization of the study: generic competences and subject-specific competences. Both categories of the competences are discussed in detail, followed by selective quotations of the students' experiences and the tables to summarize the competences.

The Generic Competences

The learning competences were related to three aspects: skills for coping with disappointments and how to overcome them in studies, self-



regulated learning skills and getting familiar with the new study culture. 'As a result, I had to experience, that of course also the study in Mikkeli is something totally new which involves totally new experiences; every course, every exam, every report or essay.'

The ethical competences included five different topics: enhancement of self-confidence, time-management skills, ability to take responsibility, higher level work morale in studies and risk taking. 'The school in general has taught me responsibility and organization skills with the tasks and their dead-lines. Persistence with the longer and/or harder tasks and exams. . . .'

The communication and social competences were related to group work skills, presentations skills, social networking skills, interview skills, and communication skills. 'I have always been a more individual person and hated it when things were done in groups. However, after doing lot of group works I have learned skills needed when working together.'

The development competences comprised three aspects: planning skills, skills for goal-achievement, and problem-solving skills. 'The first problem we had to face was that some of our group members did not show up regularly in school, so that we were not able to discuss daily assignments. Further, it was difficult to contact each other, since we did not know each other that well back then. In this situation, the rest of the group had to act since the assignments had to be done.'

The international competences included three topics: understanding of cultural differences, knowledge of international issues in business, and better communication skills in the international context. 'Studying in an international environment has been quite challenging. It has required lots of adapting and understanding. We all have different kinds of cultural backgrounds that might make it difficult to understand each other time to time.' Table 1 presents the findings related to the learning outcomes of the generic competences.

Subject-Specific Competences

In terms of the competences of *entrepreneurship and business operations*, they can be divided into three categories: knowledge, skills and attitudes. First of all, they were concerning the acquisition of theoretical knowledge of business operations and entrepreneurship. Further, they were

TABLE 1 The learning outcomes of generic competences

Generic competences/focus on learning	Frequencies
A. Learning competences	
Skills for coping with disappointments	9
Self-regulated learning skills	9
Adaptation of the new study culture	3
B. Ethical competences	
Stronger self-confidence	7
Time management skills	6
Ability to take responsibility	5
Higher work morale	1
Risk-taking skills	1
C. Communication and social competences	
Group work skills	15
Presentation skills	12
Social networking	5
Interview skills	3
Communication skills	2
D. Development competences	
Skills for planning	1
Skills for goal-achievement	1
Skills for problem-solving	1
E. Organizational and societal competences	
0	
F. International competences	
Understanding of cultural differences	3
Knowledge of international issues in business	1
Better language skills ⇒ better communication skills in the int. context	1

related to different kinds of knowledge of entrepreneurship, the personal process of becoming an entrepreneur, and the practical process of becoming an entrepreneur. Further, they were related to the knowledge of various business operations of a company.

Secondly, they were related to the *skills* of business operations: business planning and setting up a new business, the skills for running different business operations and general skills in entrepreneurship. The change of attitude towards entrepreneurship in a more positive direction was also included.

In addition, the learning outcomes were related to the acquisition



TABLE 2 The learning outcomes of subject-specific competences

Subject-specific competences/focus on learning	Frequencies
A. Business operations and entrepreneurship	
Knowledge of entrepreneurship	20
Knowledge of business operations	16
Knowledge of setting up a business	4
Knowledge of entrepreneurial behaviour	2
Skills for business planning and setting up a new business	4
Skills for running different business operations	4
General skills in entrepreneurship	7
More positive attitude toward entrepreneurship	3
B. Business environment	
Theoretical knowledge of business environment	7
Practical/applied knowledge of business environment	1

[93]

of the theoretical knowledge of the *business environment* and to the applied knowledge and actual experience of getting familiar with the business environment in Finland. The following quotations illustrate all the three categories (acquisition of the knowledge and skills, and change of attitude).

Further, table 2 illustrates the learning outcomes related to all the subject-specific competences of the most significant learning experiences.

In this school I have learned a lot of theoretical knowledge of becoming and being an entrepreneur. That is a good thing, since in order to be a professional you have to be able to manage theory and practice both. . . .

I have been strongly developing my entrepreneurial skills and have successfully been able to implement them by starting a new web design company. . . .

My entrepreneurial attitude has been further enhanced through the observations of incidents of successful cases. When we have had foreign lecturers who have been around the globe and are living proof of success, it provides support to the students who believe that it is possible to think outside of the box and become an entrepreneur or successful in anything one chooses to do.

TABLE 3 Summary of the learning strategies

Strategies used	Frequencies
1. Cognitive learning strategies	
A. Learning by applying knowledge in practice in inter. with other people	25
B. Learning by applying knowledge in practice independently	12
C. Learning by listening and thinking	12
D. Learning by reading	1
2. Metacognitive learning strategies	
A. Orientating oneself before starting on an assignment	2
B. Collecting relevant resource material	0
C. Integrating different theoretical viewpoints	0
D. Monitoring for comprehension	0
E. Assessing one's own progress	10
F. 'Mixed strategies' AE (3), DE (1), CDE (1), ABCDE (2)	7
3. Resource management strategies	
Resource management strategy \Rightarrow using external help (peer help)	1

Learning Strategies of the First Year Students

According to the findings, the students had used mostly cognitive strategies in their learning. However, metacognitive strategies and a resource management strategy were also found in the data. The findings are introduced accordingly, and the quotations of the strategies are presented to illustrate the experiences. Finally, table 3 introduces the learning strategies of the first year students.

Cognitive Learning Strategies

The cognitive learning strategies of the students consisted of four different strategies: learning by applying knowledge in practice in interaction with other people, learning by applying knowledge in practice independently, learning by listening and thinking, and learning by reading. *Learning by applying knowledge in practice in interaction with other people strategy* was the most used strategy. The students emphasised both the application of knowledge in practice and also the interactive process with other students and sometimes with teachers or local entrepreneurs. 'That was the first time I interviewed the real entrepreneur [...] in front of our group was sitting just an ordinary person and she was



willing to respond to our questions about the company, its operations, customers, management and other business-related issues. . . . The interview was the factor that pushed me to start thinking in a business way.'

The Learning by applying knowledge in practice independently strategy was related to the following situations: preparing and practising an oral presentation technically or mentally in order to face a difficult situation and process of the achieved knowledge in a big practical assignment. 'I took the Business Plan course. The course in itself did not teach much, but it gave us the opportunity to build a business plan. The course consisted of only a few lectures, basically the entire course was done from home, via Moodle. But it was a great learning experience to realize the many aspects of the business needed much more consideration than expected.'

[95]

The Learning by listening and thinking strategies were all related to the intake of knowledge during the classes. Most of them were referring to the classes of visiting professors from abroad. 'I really liked the example of the teacher from Portugal, when he put a cup on a table in front of the whole class and asked everybody who wanted that cup. Some of us including me just told him that we wanted it, but only one went to the table and took it. I was really thinking of doing the same thing, but she was the first one and the only won who took the cup. It was really a very simple but easy to understand example of acting.'

The Learning by reading strategy was in the experience which was introduced as follows: 'In addition I read a couple of textbooks on accounting during my free time where, exploring case studies from the real business world, I found connections with basic theory and real business operations.'

Metacognitive Learning Strategies

Based on the findings, the following metacognitive strategies were used by the students: orientating one-self before starting on an assignment, assessing one's own progress, and using 'mixed strategies.' *The orientating oneself before starting on an assignment* – strategy was found only in one of the experiences. 'One great challenge here has been writing essays, in which I must write about myself. In my home country we are taught to

never be self-centered, self centeredness can be seen as a negative trait. We were forbidden from using “I” in an essay.’

[96] *The assessing one’s own progress strategy* occurred after the actual learning process and it was related to the unexpected learning outcomes: either when the outcomes had been different by nature or much better or much worse than expected. The students had assessed the learning process to some extent in order to understand the reasons for the outcomes. ‘In some cases I did not do or give every time the best I could, or just did not have the courage to make 100 per cent use of my knowledge, skills and behaviour. However, afterwards I was disappointed about myself and I felt sad about the unsatisfying outcome and that I did not achieve the result I was aiming at.’

‘Mixed Strategies’

The collecting relevant resource material strategy, the integrating different theoretical viewpoints strategy or the monitoring for comprehension strategy were not found as an individual strategy, but as a combination of strategies used. They are called mixed strategies and introduced next. A combination of orientating oneself before starting on an assignment and assessing one’s own progress were found in three learning experiences, and monitoring for comprehension and assessing one’s own progress in one learning experience. Further, one mixed strategy was used which dealt with integrating different theoretical viewpoints, monitoring for comprehension, assessing one’s own progress. In addition, two learning experiences were found in which all the five strategies (orientating oneself before starting on an assignment, collecting relevant resource material, integrating different theoretical viewpoints, monitoring for comprehension, and assessing one’s own progress) can be recognised.

Resource Management Strategy

One resource management strategy was found in the learning experiences. Actually it was also related to self-regulation in learning, yet the strategy for solving the situation was dealing with seeking for peer help for the study problems. The following quotation illustrates the use of strategy. ‘Unfortunately, the result of some subjects in the first



period was not as good as I expected. [...] I became more flexible in my study, I set the time and rearranged my schedule for each subject that I took, I was more focused on the classes, and I learnt from friends how to study efficiently. In addition, my friend helped me in my study, she showed me how to study to get good results, and how to use time more efficiently.'

[97]

DISCUSSION AND CONCLUSION

Main Findings of the Study

The learning objectives of the first – year students are related to orientation to entrepreneurship, business operations and the environment as well as to the generic competences. According to the findings of this study, the most common learning outcomes are the learning competences as well as the communication and social competences, especially group work and presentation skills. Further, the learning outcomes of subject-specific competences are the acquisition of the knowledge of business operations and entrepreneurship, different kinds of skills for entrepreneurship and also change in the attitudes. In other words, the students have become aware of entrepreneurship as a phenomenon, but also as a potential career option for them (cf. Gibb 2005; Paajanen 2001; Ristimäki 2004).

According to the findings of this study, the most commonly used learning strategies of the first year students are different cognitive strategies, yet also metacognitive learning strategies are used to some extent. The cognitive learning strategies of the students included four different strategies. *The Learning by applying knowledge in practice in interaction with other people strategy*, was the most used strategy in which the students emphasised both the application of knowledge in practice and also the social interactive process with other people. The next commonly used learning strategies were *the Learning by applying knowledge in practice independently strategy* and *the Learning by listening and thinking strategy*. The first one was used in practicing some skills or in loosing a 'stage fear' as well as in applying knowledge from the classes in a learning assignment. The latter one refers mainly to the classes taught by visiting professors from abroad. Finally, *the Learning by reading strategy* was used only once to get further information about the topic taught during the classes. It seems

that the learning strategies used are connected to different learning situations and to the task involved in certain contexts (Ruohotie and Nokelainen 2000, 155; Vermetten, Lodewijks, and Vermunt 1999, 1).

[98]

Based on the findings, the metacognitive learning strategies were not so commonly used as cognitive strategies. Nevertheless, orientating oneself before starting on an assignment, assessing one's own progress, and using a 'mixed learning strategy' were the strategies used. The most common metacognitive strategy was assessing one's own progress when the outcomes were something else than expected. In other words, when the things do not go as expected, the students are able to reflect on their experiences. Nevertheless, it seems that the students were not so familiar with the metacognitive learning strategies which might, however, help them to perform better and to be persistent in their learning efforts in acquiring knowledge and skills and in monitoring their own learning progress (cf. Scholoemer and Brennan 2006, 81; Clayton, Blumberg, and Auld 2010, 351), not only then when something goes wrong.

In order to summarise the learning strategies, it can be concluded that there are some similarities between the findings of this study and the common pattern of the first year students' learning strategies in higher education introduced by Vermunt and Vermetten (2004, 367). Although the research approach was different, the existence of the dimensions of the structure can be recognised in the findings. The meaning-directed learning pattern was recognised to some extent in the findings (critical processing and thinking, self-regulation of learning processes). The reproduction – directed learning pattern was illustrated, for example, by rehearsing (applying and processing the knowledge independently) and by in – taking of knowledge during the classes. The undirected learning pattern refers to lack of regulation, ambivalent learning orientation, cooperation and stimulating education together. Interestingly, according to the findings the students valued highly cooperation with other people (e. g. group work) and the classes given by visiting professors. This might be also a sign of lack of regulation pattern and the undirected learning pattern. Nevertheless, the application-directed learning pattern was the most commonly used: process and use of knowledge was emphasised by the students. In



a way this is understandable, since the target organisation is a university of applied science. However, further studies are needed to understand these patterns better.

Limitations of the Study

[99]

In order to understand the results better in their context, also the limitations of the study should be discussed. There were limitations related to the participants as well as the data. First, since the students were asked to write and describe about the most significant learning experiences, many other learning experiences might have been excluded. In other words, now the entrepreneurial learning of the students was examined through their most significant learning experiences of the first year studies only. Secondly, although the aim was not to generalise the findings of this qualitative study, but to rather explore and understand the phenomena in their context, yet the second limitation of the study was the data. It was written by the students based on their abilities and willingness to express themselves in English.

Further, multiple meanings of the concept of entrepreneurial learning were discussed during the classes before the assignment. Based on that as well as their previous experiences, the students selected by them the experiences related to their entrepreneurial learning and therefore simultaneously they defined what entrepreneurial learning means to them. Finally, in order to complete this section of the limitations, it is worth reminding that the data and the findings were related to only one international student group. Further studies could be carried out in order to understand the cultural differences and differences by gender.

Implications for the Higher Education

In spite of the limitations introduced above, several conclusions can be drawn and implications can be presented. First, the students seem to achieve the learning outcomes of the first year quite well. In fact the emphasis on the learning outcomes of the most significant learning competences was in the generic competences, which is a good starting point for their development of professional competences later. Thus it seems that the learning objectives are realistic for the first year students.

How the objectives of the rest of the study programme are achieved will remain to be seen in further studies.

[100] The findings can be concluded so that the first year students learn best by doing: applying the received knowledge in practice in a group or independently. Further, it can be concluded that learning by reading is not used as a learning strategy. It can be explained in two ways: either this strategy is not related to the most significant learning experiences, or else the students neglect reading as a learning strategy. Although the target organisation was a university of applied sciences, it is worth emphasising that the students need theories to apply, otherwise the insight into the topics, taught during the classes, might remain too narrow.

Since self-regulated learning is associated with success and academic achievements (Huang 2008, 529; Lan 1996, 106; Kuyper, van der Werf and Lubbers 2000, 181; Scholomeer and Brennan 2006, 81), the enhancement of the self-regulated learning skills might support and facilitate the students to achieve their personal objectives better. One solution might be to teach these learning strategies to the students in an explicit way at the beginning of their degree studies, before they start their professional studies, and try to achieve more demanding academic objectives.

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Developing an Entrepreneur Mindset through Erasmus: Hacettepe University Case

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THE ERASMUS PROGRAMME serves as one of the important tools for higher education students to develop their interpersonal skills. It forms a part of their lifelong learning period, not only in formal but also in nonformal and informal learning. During the Erasmus period students develop interpersonal skills through formal education and training by attending lectures/practicals, writing essays, doing projects, and through self learning. In addition to this they acquire certain competences through nonformal and informal learning, such as living in a different environment, dealing with a new culture and people, solving accommodation issues, etc. All these activities have a major role in fostering entrepreneurial spirit among the students since they create further experiences after their formal education. This study examines how the satisfaction of Hacettepe University outgoing Erasmus students can be broken down into assessments referring to broader aspects of the students' entrepreneurial thinking during the Erasmus period. For this purpose, the expectations of 408 students who benefited from the Erasmus Exchange Programme were compared to the level of satisfaction after completing the Erasmus Programme. The survey was conducted with 51% of the total outgoing Erasmus students who completed their Erasmus period between the years 2006–2009. Their expectations were examined under three headings; social skills, career building skills, and EU harmonisation. The results indicate that the entrepreneurial mindset in terms of social and professional life was increased by the Erasmus experience.

INTRODUCTION

After the Lisbon strategy designed to make the European Union 'the most dynamic and competitive knowledge-based economy in the world

[104]

capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment by 2010,' the European Commission set up a new strategy called Europe 2020: A strategy for smart, sustainable and inclusive growth. A part of this strategy, 'An Agenda for New Skills and Jobs,' is planned to modernize labour markets and empower people by developing their skills throughout their lives with a view to increasing labour participation and better match labour supply and demand, including through labour mobility. According to the report, *New Skills for New Jobs*, anticipating and matching labour market and skills needs, education and training systems must generate new skills to respond to the nature of the new jobs, which are expected to be created, as well as to improve the adaptability and employability of adults already in the labour force (European Commission 2010).

At the same time, the European Union wants to develop greater social cohesion within and between its nations, as is clearly pointed out in many statements such as this. 'In a world of ever-increasing opportunities for exchange, it is essential to prevent misunderstanding and to stem the reflexes towards intolerance from taking root: intercultural dialogue, exchange projects, meeting and working together, actions to promote tolerance, understanding and respect for others, and projects to combat racism and xenophobia have therefore become a greater priority than ever.' (Viviane Reding, quoted in Stronkhorst 2005.) Hence, 'better internationally and interculturally equipped human resources' are most likely the added value for students, lecturers, institutions, nations, and the European Union. One of the important tools for the EU to achieve this goal is the mobility of the labour force. And, the Erasmus programme is the most important student exchange program that has changed university customs and the life for many students in this regard since 1987. This EU funded programme has a triple objective of: increasing the mobility on the EU labour market, increasing the quality of the European universities through cooperation, and building 'European citizenship.' In the framework of the programme, in almost 20 years, more than 1,500,000 students have travelled to pursue a period of a maximum one-year of study in another European country (Diana 2008, 47).



Erasmus students study their own field (formal theoretical learning, curricular learning) during their Erasmus period in the host institution. They also have many different types of experiences in the host environment, which may be accepted as informal learning (extra curricular learning, informal social and active learning), and their subject specific knowledge, skills and competences as well as generic skills are developed. Generic skills are becoming an important subject for the education of a student. The commonly accepted definition is that generic skills are 'those transferable skills which are essential for employability at some level for most', and the phrase 'generic skills for employability' is now in common usage in policy and research (Sanguinetti 2004, 1).

[105]

When we look at the personal attributes of generic skills for employability: Being self manager, cultural sensitivity, accepting responsibility for own actions, showing leadership, communication with goals and creativity are some of them (Sanguinetti 2004, 1–2).

The importance of entrepreneurship as one of the generic skills to be taught beginning in schools and continuing through life is widely accepted today. One of the indicators of this importance on the European level is that the European Commission launched a new programme called 'Erasmus for Young Entrepreneurs', which aims at helping new entrepreneurs acquire relevant skills for managing a small or medium-sized enterprise by spending time in an enterprise in another EU country. It contributes to improving their know-how and fosters cross-border transfers of knowledge and experience between entrepreneurs (<http://www.erasmus-entrepreneurs.eu>).

At the heart of entrepreneurship are imagination, creativity, novelty, and sensitivity. The entrepreneur creates something new in society, something novel, that meets a need that is latent in consumers (Rogene, Buchholz and Rosenthal 2005, 307).

Entrepreneurship is seen as the identification and exploitation of opportunities. The focus is no longer on 'organisational emergence' but rather, more generally, on the emergence of a new activity, which does not necessarily have to be associated with the creation of a new entity or new company. This notion coincides with the notion of entrepreneurship as an 'entrepreneurial spirit' or 'entrepreneurial initia-

TABLE 1 Distribution of outgoing Erasmus students

	2004/5	2005/6	2006/7	2007/8	2008/9
Hacettepe University	34	129	196	306	304
Turkey	1142	2852	4438	7119	9111

[106]

tive.' Entrepreneurial spirit may be defined as the aptitude of an individual or social group to take risks investing in an enterprise as an adventure. This adventure is the grasping of an opportunity that concerns something new, creative, value-adding, using and combining various resources (International Entrepreneurship 2008, 7–8).

We can say that the 'entrepreneurial spirit,' which may also be called the 'entrepreneurial mindset,' is an innovative practice of identifying and creating opportunities, and then acting to manifest those opportunities in a productive way.

This study focuses on the informal learning part of the Erasmus period, and what we did was to determine whether or not a relationship could be found between this informal learning and the entrepreneurship mindset.

METHODOLOGY

Hacettepe University has been participating in the Erasmus programme since the 2004–2005 academic year. Until now, 969 Hacettepe students have spent a study period as an Erasmus student at different European universities. In terms of Turkish universities, Hacettepe ranks 5th in Erasmus student mobility (table 1).

The data for this study was collected using a questionnaire developed by the International Relations – European Union Office of Hacettepe University. The questionnaire was conducted with 408 Erasmus outgoing students of Hacettepe University between the 2006–2007 and 2008–2009 academic years. This population was 51% of the total outgoing students between those years. The questionnaire consisted of a number of multiple-choice questions, questions with empty boxes for comments, and questions with a five-point Likert-scale. The first group of questions were multiple choice and sought to gain information about the respondents' gender, age-group, academic rank/faculty, and overall expectations, main problems and difficulties



they come across, etc. The second group of questions consisted of a series of items using a five point Likert-scale (not at all, not very much, some, much, very much) and were used to assess the importance and overall role of Erasmus in the respondents' social skills, career building skills and social inclusion (EU harmonisation). In order to analyze the collected data, PASW statistics software by SPSS corporation was used. The data were analyzed with descriptive statistics tests such as paired samples *t*-test, and comparing means. The skills, which may be part of an entrepreneurial mindset for Erasmus students, are listed below.

[107]

Entrepreneurial Skills for Erasmus Students:

- 1 Understanding the behaviours, values and attitudes of people in a different society;
- 2 Becoming more tolerant of different social life styles;
- 3 Adjusting to a different culture;
- 4 Having interests in different social issues;
- 5 Believing in the necessity of student mobility among European Union countries;
- 6 Being informed of international career prospects;
- 7 Having the will to work/study abroad;
- 8 Reconsidering personal plans for the future;
- 9 Enhancing the level of self confidence;
- 10 Becoming aware of powerful and creative aspects of one's world;
- 11 Becoming a more assertive person;
- 12 Being willing to undertake responsibilities and fulfilling them;
- 13 Improving foreign language competency (reading, writing, speaking, listening);
- 14 Gaining further knowledge, skills and attitudes in your major;
- 15 Sharing common values of the European Union;
- 16 Believing in the necessity of institutional cooperation regarding educational issues among European Union countries.

Respondents ranked these items with a five-point Likert-scale as their indicating expectations before the Erasmus period and their satisfactions for the same items after the Erasmus period. The above 16-item list was grouped and analyzed under three headings as: social

skills, career building skills and social inclusion (EU harmonisation) (table 3).

FINDINGS

[108] The questionnaire was conducted with 408 individuals, 72% of whom were female and 28% male. In terms of degrees, 88% of respondents were bachelor (undergraduate, first cycle) degree students, 5% were masters (second cycle) level students and 7% were doctoral (third cycle) level students. In absolute terms, Germany was the country with the highest number of outgoing students (23% of respondents), and it is followed by France (10% of respondents), Poland (9% of respondents) and Belgium (7% of respondents).

The survey consisted of 58 items that describe expectations and satisfactions about students' experiences at the host university as an Erasmus student; 16 of them described the attainments that they gained from their experiences in the host country. Those 16 items represented the entrepreneurial skills of Erasmus students. In order to divide them into 3 categories – as personal skills, career building skills and EU harmonization skills – the collected data were analyzed by factor analysis.

Altogether 480 surveys were used in the factor analysis. The Kaiser-Meyer-Olkin (KMO) and Bartlett tests were used to prove the suitability of the datasets for the factor analysis. Factor analysis identifies different dimensions of items on the basis of Erasmus students' expectation and satisfaction scores.

According to the Kaiser-Meyer-Olkin tests ($KMO = 0.921$; $p < 0.05$) it has been found that the data sets are suitable for factor analysis. The Eigen value was selected as 1 for the factor analysis for Erasmus students' data. Three factors obtained after the rotation explained 74 % of the total variance. They are as follows:

- 1 Personal skills (question numbers 1, 2, 3, 4, 14, 15, 16)
- 2 Career building skills (5, 6, 7, 8, 9, 10, 13)
- 3 EU Harmonization (11, 12)

For the relationship between students' entrepreneurial expectations and the level of their academic attainments, we applied the dependent *t*-test. According to the results we got $P = 0.005$ and $p < 0.05$



TABLE 2 Relationship between students' expectations and satisfactions

Entrepreneur skills	N	Mean	S	SD	t	p
Expectations	408	4.34	.546	406	2,844	.005
Satisfactions	408	4.42	.525			

[109]

TABLE 3 Distribution of the mean percentages for the students' answers

Mean values (%)	Not at all	Not very much	Some	Much	Very much
Expectations	0.44	1.1	12.8	30.3	55.3
Satisfactions	0.42	1.25	8.9	29.4	60

value, which shows that there is a relationship between the two, and the $r = 0.442$ value shows that this relationship is linear, which means the level of students' satisfaction is as high as their expectations. It is clear that students' satisfactions have been met with a 4.42 mean value over 5.0, which is higher than their expectations with a 4.34 value over 5.0 (table 2).

In table 3, the mean of percentages indicates that both expectations and the level of satisfaction for the entrepreneurial skills are 'very much.' More than 55% of the students specified that level of expectations for the given entrepreneurial skills were 'very much', and the returns of these expectations are even more, with the 60% of students' satisfaction level.

The distribution of the expectation and satisfaction values for each skill is shown in table 4. As stated before, students ranked their level of expectations and satisfaction between the levels: not at all, not very much, some, much, very much. According to the results, more than the 50 % of the respondents answered the 'very much' level for each skill. As is shown in table 4, a majority of the respondents (60.3%) expected *having the will to work/study abroad*. Also, the majority of respondents (57.4%) expected that the Erasmus programme would make them more tolerant of different social life styles. The results show that, after the Erasmus programme, students met their expectations with 65.9% for *having the will to work/study abroad* and 63.2% of the respondents said that *they became more tolerant of different social life styles*.

In terms of career building skills, the results show that the ex-

TABLE 4 Distribution of the entrepreneurial skills of Erasmus students for the highest answered choice

Distribution of entrepreneurial skills	Expectations		Satisfactions	
	N	%	N	%
<i>Personal skills</i>				
Understanding the behaviours, values and attitudes of people in a different society	220	53.9	232	57
Becoming more tolerant of different social life styles	234	57.4	258	63.2
Adjusting to a different culture	230	56.4	248	60.8
Having interest in different social issues	192	47.1	202	49.5
Believing in the necessity of student mobility among European Union countries	228	55.9	270	66.2
Being informed of international career prospects	228	55.9	233	57.1
Having a will to work/study abroad	246	60.3	269	65.9
<i>Career building skills</i>				
Reconsidering personal plans for the future	223	54.7	244	59.8
Enhancing the level of self-confidence	270	66.2	293	71.8
Becoming aware of powerful and creative aspects of one's world	230	56.4	252	61.8
Becoming a more assertive person	237	58.1	255	62.5
Being willing to undertake responsibilities and to fulfil them	219	53.7	246	60.3
Improving foreign language competency (reading, writing, speaking and listening)	267	65.4	230	56.4
Gaining further knowledge, skills and attitudes in your major	204	50	189	46.3
<i>Social inclusion (EU harmonisation)</i>				
Sharing common values of the European Union	127	31.1	131	32.1
Believing in the necessity of instit. cooperation regarding educational issues among EU countries	159	39	171	41.9

expectations of students were high with respect to *enhancing the level of self-confidence* (66.2%) and also *improving foreign language competency (reading, writing, speaking and listening)* with 65.4%. Satisfaction levels of both skills were found to be 71.8% for *enhancing the level of self-confidence* and 56.4% for *improving foreign language competency (reading, writing, speaking and listening)*. Their second highest satisfaction level for the career building skill was *becoming a more assertive person* with 62.5%. Social inclusion is another factor that improves entrepreneurial skills. For this reason, in order to see the social inclusion (EU harmonisation) level of the students, we wanted to see how the Erasmus program helped them to *share common values of EU and to believe in the necessity of institutional cooperation regarding educational issues among European Union countries*. According to the results, expectation and satisfaction levels for these questions were not as high as either the personal or the academic entrepreneurial skills of the Erasmus students.

[111]

However, the results show that the satisfaction level of the social inclusion (EU harmonisation) skill of respondents was higher than their expectations.

CONCLUSION

This paper examines how the expectation and satisfaction of Hacettepe University outgoing Erasmus students can be broken down into assessments referring to broader aspects of the students' entrepreneurial mindset during the Erasmus period. In this study case, personal skills, career building skill and social inclusion (EU harmonization) are focused upon in order to analyze the entrepreneurial skills of the students. It is found that students' entrepreneurial satisfactions are higher than their expectations when they finish their studying abroad.

The results of this study show that the Erasmus period has a positive effect on the development of entrepreneurial skills of students, which make them more employable. The Erasmus period contributes to the development of the entrepreneurial mindset, and this development may have some role in converting the students' theory and business planning into enterprise activity.

We know that this study is based on self-evaluation of the students. Therefore, it does not measure the actual behaviour of the students,

rather their own perception or intention. And, it should be perceptive and explorative to look at the Erasmus period from a different point of view, thus providing ‘food for thought.’

[112]

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Innovations in Entrepreneurship Teaching: The Use of Repertory Grids Within the French Grande Ecole Context

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STANDARD TOOLS FOR TEACHING entrepreneurship generally include case studies, business plans and computer simulations. The article presented here reports on classroom experimentations conducted in different European contexts using repertory grids, the methodological tool of Personal Construct Theory (PCT) in entrepreneurship teaching. The innovative entrepreneurship pedagogy is set against the background of enterprise creation within the French Higher Education (HE).

INTRODUCTION

Some of the earliest research on entrepreneurship education appeared in the proceedings of Entrepreneurship Education, a conference at Baylor University in 1981, and Entrepreneurship: What It Is and How to Teach It, a conference held at Harvard University in 1985. These initiatives were followed up by a special issue published in *AJSB* in 1988 comprising a number of articles such as that by Sexton and Bowman-Upton (1988) exploring *what* to teach students and particularly *how* to teach it.

In comparison to these early initiatives in the Anglo-Saxon context, the recognition that entrepreneurship education is vital to the well-being of our economies and societies is a more recent phenomenon in the European context. A survey conducted by the European Foundation of Management Development (EFMD) and the European Foundation for Entrepreneurship Research (EFER) in 2004 found that entrepreneurship education in Europe had started developing significantly since the late 1990s and was expected to continue to grow in

[114] the 21st century. The majority of the courses on a European level were electives, i. e. stand alone courses with little integration into the overall curriculum. The report concluded pointing out the need for more entrepreneurship faculty, more research and more pedagogical material (http://www.efmd.org/attachments/tmpl_1_art_050201rpku_att_050201igbl.pdf).

Already in 1968 the OECD created a Centre for Research and Innovation in teaching (CERI) to help the different stakeholders in education such as professionals and decision makers at various levels to deal with the different challenges affecting the educational domain and prepare for the future. One of the key issues of concern was how different teaching methods and the acquisition of knowledge could be developed in line with scientific progress, new technologies and the diversification of the student audience. Other issues related to the role of innovation in the classroom and the question of which educational systems and schools would be appropriate in the future (Istance and Shadoian 2008/9). These issues are still important today, maybe even more so than in the 1960s, given the climate of uncertainty created by the economic crisis, which has touched the majority of European countries and has impacted on a world-wide level.

Innovating in Entrepreneurship Education requires different approaches, different from traditional teaching. As the European Commission (2008) pointed out there is a need for more interactive learning approaches where the teacher acts rather as a moderator than a traditional lecturer, where multi-disciplinary approaches to entrepreneurship teaching are adopted and where, among others, specific business skills and knowledge of how to start a company and run it are successfully transmitted. However, as already Verzat, Byrne, and Fayolle (2009) and Wankat et al. (2002) highlight, there is little research into the use and outcomes of innovative teaching and as Béchard and Grégoire (2007) emphasise, there is a lack of studies that investigate what makes pedagogical innovations work, one of the few exemptions being an experimentation reported on by Verzat, Byrne, and Fayolle (2009) in the French engineering context.

The domain in which I am applying innovative pedagogy is entrepreneurship teaching and in particular entrepreneurial network



analysis, which I consider to be essential for the pre-and post start-up phase. The importance of networks has been documented in a vast literature (see for instance Brass et al. 2004; Elfring and Hulsink 2003; Johannisson 1988; Larson 1991; Nahapiet and Ghoshal 1998; Nicolaou and Birley 2003; Sorenson 2003), and Johannisson (1996) concluded that the 'personal network is a necessary but not sufficient vehicle for success' (p. 264). Hence the entrepreneur has to be aware of the usefulness and possible contribution people and organisations in his network can make to his entrepreneurial project. Despite the wealth of literature available documenting the importance of entrepreneurial networks, very little attention has been given to the importance of and the need for analysis of the entrepreneurial network as part of entrepreneurial teaching, a gap that the tool suggested here is supposed to fill.

[115]

RESEARCH DESIGN

Given the thirst for research into innovative pedagogical methods as highlighted by Verzat, Bryrne, and Fayolle (2009), this study took an exploratory approach consisting of quantitative and qualitative elements. There were three strands to the methodology investigating this innovative pedagogical tool in the classroom context: First, a pre-course questionnaire was distributed among course participants aiming to establish the latter's attitude to entrepreneurship and enterprise creation. At the end of the entrepreneurial course which would comprise between 12h and 36h depending on programme and level, a post-course questionnaire was distributed asking the participants again for their attitude to entrepreneurship and enterprise creation, but also for their evaluation of the innovative teaching tools employed in the course. The second strand was written qualitative feedback by the course participants (MA and MBA students) investigating their learning through repertory grids and their perception of both advantages/disadvantages of the tool in classroom situations and in network analysis. The investigation was rounded off by asking whether the course participants would recommend the tool for next year's teaching. The third strand of the research was a number of semi-structured interviews with course participants, seeking their views about repertory grids

in entrepreneurial teaching. The qualitative data were contents analysed using Grounded theory methods in line with Glaser and Strauss (1967), who saw the task for the researcher as having to develop theory through ‘comparative method,’ i. e. investigating the same event or process in different settings or situations. This article presents findings from the second and third strand of the research project. I begin by outlining the state of entrepreneurship education in France, followed by a short introduction to the innovative pedagogical tool, i. e. repertory grids from George Kelly’s Personal Construct Theory (PCT) and a practical illustration of these grids in entrepreneurial network analysis at pre-organisation stage. This is followed by a discussion of the results of this study, which concludes with some suggestions for future research.

ENTREPRENEURSHIP PEDAGOGY IN FRANCE

Whereas entrepreneurship education within an Anglo-Saxon context has increased tremendously over the past 30 years, and the earliest entrepreneurship courses date back to the 1940s, the situation is quite different in France, despite growing awareness of the importance of entrepreneurship and enterprise creation for the French context (Fayolle, Hernandez, and Séricourt 2005). Following Carayannis, Evans, and Hanson (2003) the French educational context is characterised by a lack of entrepreneurial activities in the educational system as well as a lack of acceptance of failure. Education ‘is targeted at the “normalization” of students’ (Carayannis, Evans, and Hanson (2003, 760) and discourages the expression of creativity. This is also in line with Fayolle, Hernandez, and Séricourt (2005), who highlighted that in the French education system students are asked to resolve well structured problems. Right from the start they are provided with all the elements needed to solve the problem, which creates the impression that only one solution is possible. As the authors underline, this does, however, not reflect the entrepreneurial reality and students are ill-prepared to develop entrepreneurial projects.

As Fayolle and Séricourt (2005) concluded, entrepreneurship teaching is important to develop an entrepreneurial culture in France and ‘render French society more tolerant in terms of risk taking, accepting



innovation and the recognition of individual initiative.' In response to the growing socio-economic problems in the mid to late 1990s, the French state encouraged a very strong mobilisation in entrepreneurship education (Mandelin 2002). As a result a number of surveys were conducted by for instance Béranger, Chabbal, and Dambrine (1998) and Fayolle (1999) to establish the state of entrepreneurship in the educational sector (universities and Grandes Ecoles) in France. [117]

Following the publication of these reports, the Ministry of Education, Research and Technology made teaching and training of entrepreneurship a priority in education. Proposals were developed to target three levels of intervention: to raise student awareness, irrespective of the subject studied; to support students who are promoters of projects to set up a business and to provide specialised training for particularly motivated students to allow them to obtain specific managerial skills. As emphasised by Gabriel Madelin, responsible for the relationship between schools and enterprises at the national Ministry for Education, the primary objective was not the creation of enterprise but awareness raising for the real functioning of an enterprise. Thus a profound renewal of pedagogic practices is needed which gets translated into a pedagogy of stimulation and a very deep involvement of the teacher into the subject to motivate and interest students in issues of entrepreneurship. At least once in their educational career students should have the experience of setting up a company, even if it is only fictitious (Lecherbonnier 2002). In response to this, Frugier (2005) found that case studies or project work based on creativity exercises have increasingly been used in French entrepreneurship teaching which place students in an entrepreneurial situation where they can apply their already existing management competences. Verzat, Byrne, and Fayolle (2009) also report on the use of games as a pedagogical tool when teaching engineering students within the French Higher Education context.

Based on a recent INSEE survey, Létowski (2006) found that in 2006 out of 321,500 entrepreneurs in France 124,000 were younger than 35 years, which represented 38.5% of the total entrepreneurial population. Subdividing the number of 'young' entrepreneurs further into three age groups, younger than 25, 25 to 29, and between 30 to 34 we

[118] find 20,900 (6.5%), 48,200 (15%) and 54,600 (17%) entrepreneurs respectively in each group. Among those entrepreneurs younger than 35 years about 8,000 were graduate entrepreneurs, i. e. students who had created immediately after they had finished their studies. These graduate entrepreneurs represented 2.7% of all entrepreneurs in France.

Taking the population of 8,000 graduate entrepreneurs who were less than 35 years old and comparing them with the general population of young entrepreneurs (individuals younger than 35 years), Letowski found that two thirds of the former either had a 2nd cycle (18.6%), 3rd cycle (40.5%) or Grande Ecole (8.4%) diploma, which is different from the group of young entrepreneurs who often only possessed a secondary school qualification (62.5%) (a 2nd cycle qualification is roughly equivalent to graduate education (A-level plus 4 years), a 3rd cycle requires at least A-level plus 5 years of study ranging from Master's degree to PhD). Graduate entrepreneurs tend to create in consultancy services (41.8%), retail trade (10.3%) and health services (8.4%). Conversely, young entrepreneurs created in construction (25%), retail trade (15.5%) and industry (9.8%). For both graduate and young entrepreneurs the entrepreneurial networks consisting of family, friends and business support organisations were of importance as they sought support from their family to create their project, yet the former slightly more (37%) than the latter (32.5%). Young entrepreneurs also sought more advice from specialists (22%) and business support organisations (34%) compared to graduate entrepreneurs with 18% and 17% respectively. Young entrepreneurs were also more supported by their spouse (21%), which is three times higher than the number of graduate entrepreneurs (7%).

Among those entrepreneurs aged 25 to 35, 43% had an HE diploma, yet only 5% came from a Grande Ecole background. This is certainly a very interesting finding, given that the innovative teaching practices have been happening within the Grande Ecole context which seems to be less conducive to producing entrepreneurs (also see Klapper 2004). Examining the development from 1998 to 2006, Letowski (2006) showed that the number of entrepreneurs with an HE qualification in the age group of 25–35 has increased continuously from 33% to 43%. Twice more entrepreneurs in this age group created in the services sector than graduates without an HE diploma. Very little change



occurred between 1998 to 2006, as 21.5% of all creations targeted the services sector. Those entrepreneurs with a 2nd or 3rd cycle qualification were numerous in creating on their own (32%), receiving help from their family (30.5%) or from an enterprise agency (26.5%).

The statistical data presented here suggest that Grandes Ecoles graduates creating an entrepreneurial venture are in the minority in France. Given this situation, the question needs to be raised as to which teaching tools are appropriate for encouraging an interest in entrepreneurship in the Grande Ecole student population.

[119]

REPERTORY GRIDS — A TOOL FROM PERSONAL
CONSTRUCT THEORY (PCT)

Repertory grids are the methodological tool of Personal Construct Theory (PCT), which was developed by the practising psychologist George Kelly (1955) and aims to elicit concepts defined in the participants' own words in a systematic way and enables comparison between an individual's construct systems. Personal construct psychology is a theory of individual and group psychological and social processes that takes a constructivist position in modelling cognition (Aranda and Finch 2003; Fontaine and Fransella 1988). Kelly's key question was: *How does a person, consciously or unconsciously, construe the world?* (Fontaine and Fransella 1988). This theory provides a fundamental framework for both theoretical and applied studies that seek the acquisition of knowledge, aim to measure attitude, personality and engage in cognitive mapping (Aranda and Finch 2003). As Fontaine and Fransella (1988) comment, Kelly's demand for the individual to be actively involved in anticipating events from the *inside out* was at his time revolutionary given the ongoing struggle against the then dominant paradigm of complete determination from the *outside in*. For further information about the theoretical aspects underlying repertory grids see Klapper (2008) and Klapper and Tegtmeier (2010).

EXPERIMENTATION WITH REPERTORY GRIDS
IN ENTREPRENEURIAL PEDAGOGY

I have experimented with repertory grids in different situations: First, in doctoral research which I conducted between 2005 and 2007 with French entrepreneurs and from December 2008 onwards in en-

trepreneurial teaching in a French Management school context. In general there were between 25 and 38 participants per course.

[120]

The application of repertory grids in entrepreneurial network analysis is embedded within the context of a lecture on the importance of networks and social capital for the success of a fledgling venture, which has been preceded by a practical session on entrepreneurial idea development, i. e. the students have already developed and presented an idea that could be appropriate for an entrepreneurial project. The analysis of their entrepreneurial network is hence a practical tool to make the students aware of the contribution any contacts from their diverse networks could make to their entrepreneurial project. The theoretical context of the network lecture (early research on entrepreneurial networks, definitions, types of networks, the benefits from entrepreneurial networking) are presented in a standard lecture format (1,5h), followed by an explication of repertory grids and their use/merits in entrepreneurship. The task for the students is then to use repertory grids either to analyse their entrepreneurial network at the pre-organisation stage. As a last step the information is integrated in Gridsuite 4 which produces both a cluster analysis and principal component analysis. This analysis can potentially highlight the strengths and weakness of the participant's existing network, but also the interrelatedness of network contacts and their competences and ways of thinking. A further major advantage of this tool is that it allows the participants to develop their own networking strategy appropriate to their individual situation.

REPERTORY GRIDS

Practical Steps to Establish the Repertory Grid

First, students had to organise themselves in teams of two; they had to decide whose network analysis comes first. Second, the person whose network was to be analysed was asked to provide a list of possible contacts. The elements integrated in the matrix are the different individuals or organisations that could potentially be involved in the different stages of the entrepreneurial venture creation process. If the interview partner refers to an organisation, I would advise him/her to identify at least one personal contact. Third, the names of the different individ-



uals/organisations were then transferred to individual cards and one of the students, usually the one whose network was to be analysed, had to draw three cards randomly, which in the literature is referred to as the 'triad' (Beail 1985; Hunter and Beck 2000). Fourth, the interview participant was asked to identify what two elements of the triad had in common and how a third was different to them. The key issue here is to identify the differences in the contribution of the different elements to the entrepreneurial project. The similarities and the contrasts that are identified throughout this exercise represent a bipolar description (dichotomous construct) (Hunter and Beck 2000), which is used to fill the grid. As Beail (1985) commented critically, the disadvantage of dichotomising is that it 'does not allow for shades of grey' (p. 7). Fifth, this problem is, however, addressed through a rank ordering of the elements according to the bipolar concepts. Once all cards had been dealt with, the interview partner was asked to rank the different network contacts with regard to the identified constructs on a scale from 1 to 5. The ranking itself did not automatically contain a value judgement about the network member's competences, but should rather be understood as an indicator of their positioning with regard to the identified concepts. As Beail (1985) points out, ranking has much more potential to discriminate the data than the dichotomous method; the downside is, however, that the interview partner may be obliged to indicate differences between elements where there are none. Sixth, as a last step the network analysis via Gridsuite 4 provides information about the interrelatedness of the different concepts and the like-mindedness of the different network contacts.

[121]

An Example

The example given here was taken from the MBA session 'Products and Markets seen from an entrepreneurship point of view', referred to earlier. Two students: NB and his partner X conducted the interview together. The objective was to analyse NB's existing network that could be of use for an entrepreneurial project of a company that specializes in building management systems (BMS). These systems basically offer to the customer the ability to control all the technical aspects of a building from one computer, such as electricity, plumbing, A/C, fire

detection, video surveillance, elevators and many more. Needless to say, this is a very demanding field that requires a high level of technical expertise and a network of people able to provide the company with its potential first customers and possibly even help in financing the project.

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The first part of the analysis consisted of choosing a number of people that form the network the student believed could help achieve his professional objective. Eleven people were chosen who are briefly presented below. NB was integrated in the grid too.

- NB is a 26-year-old engineer with 3 years of experience in the area of building management systems. He received a bachelor's and a master's degree from Virginia Tech and is currently pursuing an MBA degree at a French Management School.
- AC is a 42-year-old controls engineer and has 20 years of experience in the field of building automation. AC was the student's manager when he was working for IBM.
- HB is a 28-year-old electrical engineer and has been working for CM for over 5 years. The student worked with him in close collaboration on several projects as their companies were partners.
- MB is a 59-year-old financial manager with 35 years of experience in finance and economics. He is very knowledgeable about business administration and happens to be the student's father.
- AH is a 55-year-old business man with experience in many areas. He has a great level of expertise in Entrepreneurship since he has created several successful companies. He is the student's father in law.
- YI is a 27-year-old business man who is one of the student's best friends. He received a Master's degree in Management Information Systems from Boston University and is now running his family business which consists of a steel plant and several real estate companies.
- ZC is a 25-year-old notary who is currently working at a large notary office in Morocco. She has only been working for a few years but she is very knowledgeable when it comes to legal issues.
- D is 24 years old and is the student's wife. During her university



studies, D specialized in marketing before working in the sales department of an advertising firm. She is currently pursuing an MBA degree.

- NK is a 28-year-old sales manager at DM. He has had no formal university training but has been working in the sales department of many companies for over 8 years.
- IJ is a 65-year-old Electrical Engineering professor at VTech in the US. IJ has a PhD in Electrical Engineering and has many years of experience. He also has a large network of people working in the High-tech area.
- MZ is a 26-year-old consultant at A in the US. MZ has a bachelor's degree in Business Information Technology.

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Having identified the people who would be involved in the entrepreneurial network during the pre-organisation stage, these contacts were integrated horizontally into the grid (see figure 1). An initial three people were chosen randomly from the list of contacts to establish the differences and commonalities between the different contacts in the network based on the 'triading' procedure described earlier aiming to arrive at bipolar constructs. The student would then rate the network contacts on a scale of 1 to 5, with 1 being the lowest and 5 being the highest.

The following bipolar concepts (vertically on the left and right hand side of the grid; see figure 1) were integrated in Gridsuite 4. The concepts were as follows:

- a People that can give financial support/People that can give moral support
- b People with good engineering expertise/People with good managerial skills
- c People with a huge network within local administrations/People with a huge network of potential clients for the company.
- d People that are for the project/People that need to be convinced
- e Distance/Proximity
- f People that can be trusted under some conditions/People that can be trusted under all conditions.

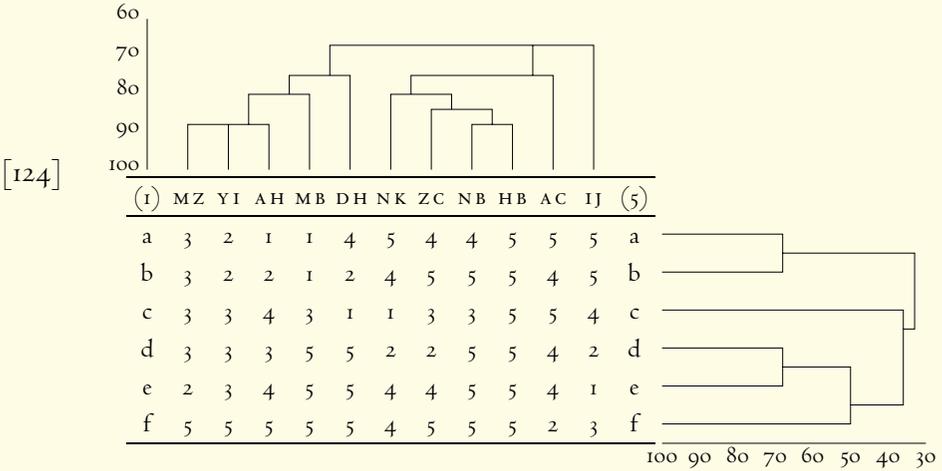


FIGURE 1 Dendrogram of NB's entrepreneurial project

Figure 1 shows the resulting cluster analysis with the concepts on the left and right hand side of the grid and the network contacts horizontally. From the analysis of this dendrogram we can detect a high correlation (88%) between the student himself (NB) and his network contact HB. Discussing the results with NB he commented that this result made a lot of sense, as the two share a lot of common interests and have almost similar ratings with respect to the bipolar concepts. In addition, there was a high correlation between NB, HB and ZC at 83%, and NK at 80%, indicating a high level of like-mindedness among these network partners. As NB suggested, the latter two could be even closer to him if he could convince them to be in favor of his professional project. In comparison, MZ, YI and AH are very close to each other (88% correlation), but further away in their thinking from NB at 67%. Along with MB at 80%, these people are very similar in the sense that they all have significant business administration expertise and they can all potentially provide financial support for the project. These people are very important for the entrepreneurial project as they can all be trusted under all conditions and can be very helpful in providing managerial advice since most of them are successful businessmen. The majority of them needs to be convinced, however, of the potential of the project. As a result, NB concluded that he needed to present a strong business plan and a feasibility study to bring them on board.



Furthermore, as shown in figure 1, there was a correlation between the people that have a good engineering expertise and the ones who can give moral support. NB suggested that this was a very positive result, given that he would most probably need the technical expertise of these people and it would be very beneficial to get moral support from them as well.

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One final point that was made concerned the correlation of 70% between the two concepts ‘people in favor of the project’ and ‘proximity.’ This result is understandable, given that those closest to NB would also have a tendency to be in favor of the project.

FINDINGS OF THE RESEARCH

The investigation of the efficiency and efficacy of repertory grids in entrepreneurship classes has focussed on three key questions:

- What are the advantages/disadvantages of using this tool in classroom teaching?
- What are the advantages/disadvantages of this tool in network analysis?
- Would you recommend this tool for more teaching next year?

One of the first results of this investigation is the overwhelmingly positive approval of the use of repertory grids as an innovative teaching tool, 98% of the course participants recommended the tool for next year’s teaching.

Having applied Grounded Theory methods, I was able to identify two main categories of advantages and disadvantages of repertory grids in classroom situations: technical/hard aspects versus soft skills development. The results are summarised in table 1.

Technical/functional advantages of using repertory grids in classroom situations related to the *ease of application of the tool, its practicality, its clarity and its interactive character*. In terms of soft skills developments, repertory grids made course participants more aware of the importance of their network contacts for their entrepreneurial project. Furthermore the use of repertory grids promoted *self-criticism and critical reflection* among the different audiences, the students reflected upon their individual behaviour but also in relation to their team. In general

TABLE 1 Advantages and disadvantages of repertory grids in classroom situations

Advantages in terms of their technicality/ functionality (hard skills)	Advantages as measured in soft skills development	Disadvantages (mix of technical/functional issues & soft aspects)
[126] Objectivity	Awareness raising \Rightarrow who is useful in our environment	Process of conducting method may be a bit <i>long</i> & <i>monotonous</i>
Ease of application	Promotes self-criticism and reflection of individual behaviour	<i>Subjective</i> method as person creating grid evaluates friends
Practical tool	Promotes teamwork, submission, sense of responsibility and solidarity	<i>Class size</i> as disadvantage, teacher may not be able to check that all students saw most of opportunities, not all students engaged in process, the bigger the group the more time required
Clarity	Points out relationships between key aspects in entrepreneurial project	During initial set up of tool only one student is involved
Promotes interaction		

the respondents highlighted that the tool promoted *teamwork, a sense of responsibility and solidarity*. A further key aspect that emerged from the data analysis was that the work with repertory grids triggered awareness of the interrelatedness of different aspects appertaining to the entrepreneurial project.

Few students pointed out any disadvantages of working with repertory tools, but those who did mentioned that the process of conducting the method could be a bit long or potentially monotonous. A few participants criticised the subjective nature of the grids which may lead to mistakes in evaluating people in one's network. One of the disadvantages was that the tool's demonstration in the classroom focused on one student only who developed his/her grid with the teacher. The remaining students' role was reduced to that of observers trying to understand the process of creating a grid. Class size was also mentioned as a disadvantage; the bigger the class the less attention the



TABLE 2 Advantages and disadvantages of repertory grids in network analysis situations

Advantages in terms of its technicality/functionality	Advantages as measured in soft skills development	Disadvantages
Clarity	Helps s w o r analysis – strength, weaknesses, opportunities and threats in environment	Evaluation may not be clear
Visibility	Helps develop guidelines for network development	Grids give a snap shot of today, may be different in six months
Ease	Helps in decision making processes	Confusion about how to use the tool, better to practice in classroom than as homework
Gives big picture	Extracts tacit knowledge about network ⇒ reveals knowledge/competences already possessed in network, highlights usefulness of friends/family	Emotions may get in the way ⇒ heart rules over brain, subjectivity, grids may be different from one person to another
Minimum resources required	Combines in and outside world	Not the same level of detail known by everybody
Can be designed to accommodate specific purposes (high degree of flexibility)	Shows inferences about personalities in network	It should not be the only method
	Triggers reflection	Ethical problems: don't treat people as a tool

[127]

teacher could give to helping students develop their repertory grids.

Table 2 gives the advantages and disadvantages of repertory grids in a specific context, i. e. network analysis in a start-up situation. Similar to the earlier analysis, course participants stressed functional aspects such as clarity, visibility and ease of dealing with the grids. They provide a *big picture*, i. e. give a global overview of an individual's network, without requiring many resources. Grids were considered as very flexible and easily adjustable to many different purposes, even outside of network analysis. Some students recommended that the tool could find its application in human resource management.

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In terms of soft skills, course participants emphasised that the grids facilitated a SWOT analysis an individual's network, promoted reflection and aided the development of guidelines on how the network could be modified in line with the aims and objectives of the entrepreneurial project. Furthermore grids were considered as an important tool in decision-making processes, and participants emphasized that the grids helped to extract tacit knowledge about an individual's network, revealing knowledge and competences possessed by the different contacts, thus highlighting the usefulness of friends and family for start-up. As a result, inferences could be made about the people involved in the entrepreneurial project. One of the most interesting comments made by one group of Master students was that repertory grids combine the in-and outside world, which is a very appropriate description of the dual nature of these grids.

Course participants rarely mentioned major disadvantages of the grids, several found the evaluation of the network members difficult and a few were confused about how to use the tool. One group of students criticized that the grids only provide a snapshot of the entrepreneurial network at a given moment in time, the situation may be very different in six months' time. Another group of students was concerned, as already mentioned earlier, about the subjective nature of the grids and that emotions may get in the way when evaluating network members. Some students also felt that they did not have the same level of intimate detail of every network member, which made the creation of the grids more difficult. It was hence recommended to use complementary methods to analyse the network. It was also very interesting to see that one group of students was very much concerned with the ethical implications of using repertory grids as they warned against using people as tools. These results are summarised in table 2.

Table 3 summarises the technical/functional aspects of repertory grids such as their ease of application, practicality; clarity, their flexibility and the potential advantages of the tool as it encourages soft skills development such as obtaining a holistic view of the network, spotting opportunities through the network and raising awareness about who could be 'useful' for the project and the different strengths, weaknesses and risks inherent in the network and the project itself. Other aspects



TABLE 3 The usefulness of repertory grids

Promotes acquisition of soft skills, such as
<ul style="list-style-type: none"> • Learn the big picture • Spotting opportunities in network • Awareness raising (who is 'useful' for an entrepreneurial project) • Self-criticism, reflection on individual behaviour • Teamwork, sense of responsibility and solidarity
<ul style="list-style-type: none"> • Facilitates decision making processes • Helps reduce risk in start-ups • Facilitates creating without much experience
Technical aspects of repertory grids: objectivity, ease of application, practicality, clarity, interaction, task specific, economic, flexible – can be tailored to different situations

[129]

encouraged through the grids relate to increased levels of self-criticism and reflection by students and the promotion of teamwork, a sense of responsibility and solidarity. Important was also the role of repertory grids in decision-making processes where they help deal with situations of uncertainty and aid the process of risk reduction. Finally, as the course participants pointed out, the tool facilitates creation without much professional experience as it increased awareness of the usefulness of their surrounding environment for the entrepreneurial project.

CONCLUSION

This article has reported on an example of innovative teaching using the methodological tool of George Kelly's PCT, applied in entrepreneurship courses at a French Grande Ecole Management School. I have presented the advantages/disadvantages of repertory grids in classroom teaching and network analysis, as identified by the course participants.

Further analysis is needed to establish cross-national differences in the perception and usefulness of grids. The overwhelmingly positive response of the audience has, however, underlined the importance of repertory grids in teaching entrepreneurial network analysis and its appropriateness as an innovative pedagogical tool in entrepreneurship education.

Implications for Business Support Policy

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The findings of this research are of particular relevance for policy-makers and business support organisations (BSOs) involved in the development of start-up policies at both local, regional and national level, as the study has underlined the need to include a networking element in entrepreneurial support programmes at local, regional and national level. Awareness needs to be raised of the importance of entrepreneurial networking at the different stages of the start-up, as already emphasised by Neergard and Madsen (2004) and Tötterman and Sten (2005) who found that networking was not necessarily a priority for entrepreneurs. Hence network analysis tools such as repertory grids should find their acceptance in the training programmes of BSOs.

Implications for Education Policies

The findings of this study have also wider implications for the pedagogy employed in Higher Education institutions in different cross-national contexts. There are different implications for the course design, but also for the teaching staff. In terms of the course design there are a number of recommendations that arise from the findings of this study:

- As existing curriculum development does generally not consider the way entrepreneurs think and perceive their world, future course design should take into account the role of networks and networking, thus raise awareness of the need to develop effective networking skills, but also train the students' analytical skills to evaluate their existing networks, personal and professional, and develop strategies of how best to employ these for their entrepreneurial project.
- There are also a number of implications for teaching staff themselves: First, awareness needs to be raised among staff that networking is key throughout the start-up and second, staff needs to be trained to use appropriate tools such as repertory grids for network analysis. The development of a pedagogy for entrepreneurship courses also pre-supposes that those involved in



such programmes should better understand the link between networking skills, strategy development and survival of the venture.

Potential for Future Research

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The study participants have already pointed out the potential applicability of repertory grids in wider business contexts, an idea I will pursue at a further stage. Further research is also anticipated using existing student assignments to analyse the information about the latter's networks at start-up, which gives a potentially unique insight into students' contacts.

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Towards an Entrepreneurial University

DINO ARNAUT

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THE TRANSFORMATION of a traditional research university into an entrepreneurial university is a current phenomenon, and the number of such transformations is increasing due to the reduction in the university funding from government sources and the emergence of a competitive market for education and research. If universities do not become agents of innovation, i. e. entrepreneurial universities, they will hamper regional and national development as well as international competitiveness. The University of Zenica is still a teaching university, but creating an entrepreneurial university is vital to achieve sustainable economic growth in this region. The overall goal of this paper is to highlight the importance of an entrepreneurial university and to analyse current characteristics of the University of Zenica. This paper presents the identification of what is necessary to become an entrepreneurial university and answers the question how to implement transformations in order to become an entrepreneurial university; in addition, it presents the identification of possibilities and obstacles during such a transformation.

INTRODUCTION

Universities have been struggling with different issues over the past ten years, such as the Bologna process, globalization and internationalization of higher education, rising number of the student population, financial restrictions and the recent financial and economic crisis. The main question for universities today is how to adapt to the dynamic and ever-changing environment.

The potential and real contributions of universities to economic development have long been discussed and much has been written over the past decade about the concept of the entrepreneurial university. Drawing from the US and European literature and experience (Clark 2004) it can be argued that Universities are entrepreneurial when they

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are unafraid to maximise the potential for commercialisation of their ideas and create value in society, and do not see this as a significant threat to academic values. Behind this lies recognition of the need for a diversified funding base involving raising a high percentage of their income from non-public sources. A new approach has emerged focusing on promoting the spill-over of knowledge through *an entrepreneurial university*. Integrating a university's mission for economic and social development urges universities towards transformation of traditional teaching, and research universities towards entrepreneurial universities. There is now a considerable international literature addressing the notion of what has been termed *the entrepreneurial university* (Gibb, Haskins, and Robertson 2009). The entrepreneurial university concept embraces universities of all types including those with a strong research tradition as well as newer organisations. The literature, both academic and pragmatic policy-oriented, ranges over a wide range of issues including (Gibb, Haskins, and Robertson 2009, 3):

- The basic philosophical idea of a university and how this is changing over time and the culture of the university;
- Commercialisation of university know-how;
- Process of technology transfer and exchange;
- The associated closer engagement of the university with industry and indeed stakeholders of all kinds;
- The movement towards a *Triple Helix* model of partnership between government, industry and higher education;
- The employability and skills development agenda of graduates and their preparation for a global labour market;
- The strategic response to the *massification* of demand for higher education;
- The internationalisation of universities and their strategies for dealing with global competition (both opportunities and threats);
- The changing nature of the knowledge society and the challenge this poses to the organisation of knowledge within higher education;
- The pressures on universities to respond to social as well as



economic local and regional development problems albeit in a global context;

- The central pressure upon higher education, from central government, to foster innovation and demonstrate relevance to national and international competitiveness agendas;
- The autonomy and future funding of universities; and
- Overall, in response to the above, reflections on the *public value* of higher education institutions.

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All of the above pressures have served to shape change in the organisation and governance structures of universities, and they are also leading to changes in mission statements and strategies. These changes have been the focus of much of the debate concerning the entrepreneurial paradigm.

The past decade is marked as the period of Europe's worst economic performance, and growth of interest in entrepreneurship. Such development has its ground in economic recession, growth of unemployment in most countries, etc. Policy makers throughout Europe have become aware of the key role that entrepreneurship plays in the achievement of economic growth, development and growth of employment rate. Higher education institutions, especially universities, play an important role in providing the necessary education for future entrepreneurs. The transformation of a traditional university into an entrepreneurial university will play an important role in advancing the global knowledge-based economy (Lazzeretti and Tavoletti 2005). The role of an entrepreneurial university in the dynamic environment of the knowledge economy is to support economic development by increasing the amount and quality of research (applied and basic) and transferring such new knowledge to the community quickly through education and entrepreneurship. The traditional university is usually engaged in two main activities: research and teaching. Knowledge is transferred to the community through students who are later incorporated into the labour market, by publications in scientific journals, which can take a considerable period of time. Entrepreneurial universities redefine the traditional roles of a university in the community as a knowledge creator through basic and applied research, technology and

[138] knowledge transfer agent, innovator, and supporter of economic development (Bercovitz and Feldman 2006). The new activities assumed by an entrepreneurial university aim to speed up the process of translating research into applications that can be quickly commercialized. This transformation is made possible by the creation of alliances with industry that make available to the university fresh resources and intangible assets that public moneys cannot afford. At the same time the government may continue to play an important role in defining, coordinating and supporting research in critical areas which society needs and which may not be attractive to industry, in order to accomplish a balanced development. Universities must turn into evolutionary entrepreneurial organizations to fulfil their mission in an economy which must increase wealth and create employment by incorporating new knowledge in innovative products and technologies (Röpke 1998, 8).

An entrepreneurial university is characterised by a number of key factors (Robertson 2008):

- Strong leadership that develops entrepreneurial capacities for all students and staff across its campus;
- Strong ties with its external stakeholders that deliver added value;
- The delivery of entrepreneurial outcomes that make an impact on people and organizations;
- Innovative learning techniques that inspire entrepreneurial action;
- Open boundaries that encourage effective flows of knowledge between organizations;
- Multidisciplinary approaches to education that mimic real-world experience and focus on solving complex world challenges;
- The drive to promote the application of entrepreneurial thinking and leadership.

In order to be entrepreneurial, the university must embed entrepreneurship in every part of itself, from its leadership through to its teaching and student impact. It needs to demonstrate excellence in strong leadership at all levels, innovative faculties and a clear, tangible impact on staff, stronger engagement with students in a diversity



of learning opportunities, business and the local community, and it needs to demonstrate a long term commitment of higher education institutions to engaging in enterprise and entrepreneurship, which will consequently help to develop the economy.

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CHANGING UNIVERSITY PARADIGM

There is a structural shift at European Universities from their traditional missions of education and research to a third task, the commercialization of new knowledge for economic development (Etzkowitz et al. 2000). The changing dynamic environment of higher institutions and their respondent evolution is portrayed in figure 1. The figure attempts to characterise the evolving nature of the task environment facing universities on a simple/complex and certain/uncertain axis. It highlights the way that the notion of *Excellence* might be changing. Certainty in the environment has been reduced by changes in funding. There has been a movement away from a system that was at one time nearly total central or regional public funding, to a situation where a growing proportion of finance has to be sought from non-direct public sources including fees, research grants, local development monies, alumni, industry and social enterprise, contract research and philanthropy. While government remains a key player in most countries, it has moved its disbursement stance into a more directive mode. Thus the uncertainty resulting from having to seek a greater proportion of funding from other sources is matched by pressure to move away from the simpler, more certain, *autonomous* environment (guaranteed by the public purse) within which to pursue individualistic research and teaching. There is now an imperative to demonstrate more direct public value. The public pressures for change are underpinned by a number of factors (Gibb, Haskins, and Robertson 2009) which are also contributing substantially to uncertainties and complexities (explained hereinafter).

Of major importance is the move to what has been labelled the *massification* of the education offer from the university sector. It is difficult, if not impossible for this growth in demand to be wholly funded by the state. This leads in turn to the creation of a more openly competitive market for students, requiring a more entrepreneurial response from institutions, and it is also leading to a more critical and demand-

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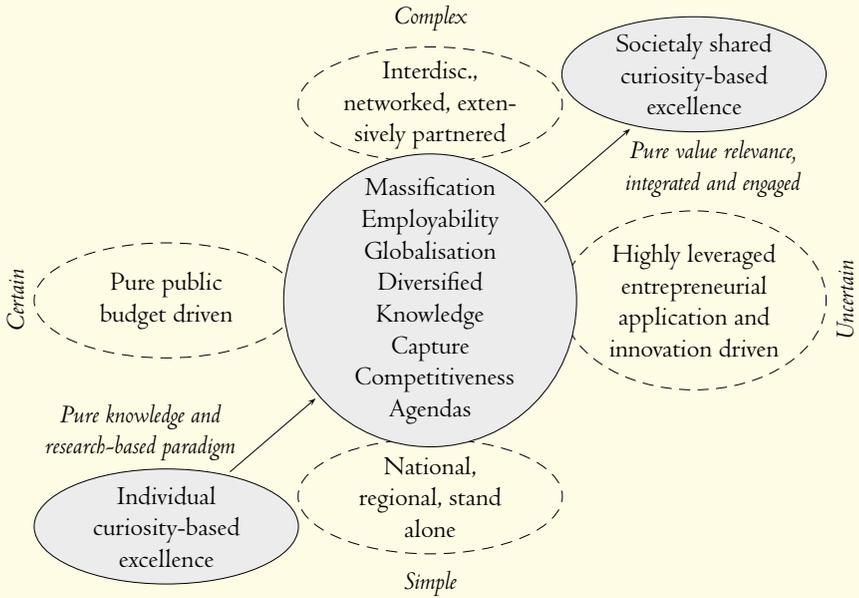


FIGURE 1 Changing university paradigm (adapted from Gibb, Haskins, and Robertson 2009)

ing student consumer group many of whom are now funding more of their own education through personal debt. The global downturn has also impacted substantially on the issue of the employability of graduates.

However, this issue goes beyond that of simple graduate unemployment and employment prospects. Now there are calls by industry and indeed governments for graduate education to incorporate a greater skills focus across the whole curriculum. Employers express the need for graduates to be equipped with a range of *enterprising skills* with foci upon creativity, capacity for innovation, networking relationship management and risk taking. This *need* is calling for the development of the *Entrepreneurial Mindset* in the student population. But industry needs to move beyond industry demand towards articulating the need to equip students at all levels in the education system with personal entrepreneurial capacities to deal with greater levels of uncertainty and complexity in both their work and personal life, and in that way entrepreneurship becomes almost an intra-disciplinary concept intrinsic



to the development of all students and teaching staff (Gibb, Haskins, and Robertson 2009).

In the context of a global labour market, internationalisation is seen as part of a competitive strategy to improve quality of staff and students via overseas recruitment as well as a means of enhancing student experience and existing staff development. Commitment to it involves elements of entrepreneurial risk taking and strategic choice. Prestige, not finance, appears to be a major motivation. Also there has been a substantial growth of student societies in universities across the world, with many of them linked internationally in partnership. These societies become a mechanism for articulating student needs to the university and to the demand for entrepreneurship programmes across the whole curriculum. [141]

A major influence upon the drive to internationalisation is the rise of the global knowledge economy accessed substantially through the internet. The web has effectively eaten into the local and national monopoly of knowledge that universities have traditionally enjoyed. The sharing of experiential and tacit knowledge via the internet also exposes *the know how* position of universities. In that way, academe is confronted with the challenge of becoming more of a *learning organisation* rather than solely a *learned organisation*, opening itself up to learning from a wider range of stakeholder sources (Gibb, Haskins, and Robertson 2009). The development of university technology transfer as a professional field also offers new career perspectives to university employees but also for students (Siegel, Wright, and Lockett 2007; Mosey, Lockett, and Westhead 2006). In the developed economies, active university engagement in knowledge exchange has also been substantially driven by a public policy agenda which has placed higher education firmly in the forefront of the enhancement of national innovation and competitiveness.

*Triple Helix - Higher Education, Government and Private Sector
Partnership*

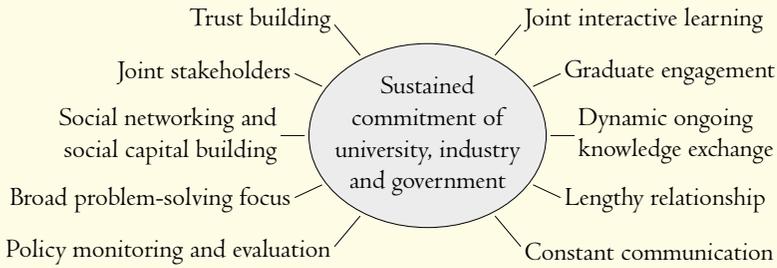
While much of the discussion of the Triple Helix model is narrowly focused upon knowledge transfer, universities have increasingly been drawn into a playing a stronger regional social and economic develop-

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ment role in many other ways (Arbo and Benneworth 2008). While they are often important employees and indirect job generators in a region in their own right, they can take on the mantle of being a leading network hub for focus upon regional development issues. They can act as animateurs for the development of sustainable networks of exchange on important issues. They can focus upon supplying skilled young people to a region and are a mechanism for enhancing social mobility. Through their outreach education and training programmes, they can seek to bring forward the future and act as a major learning source for regional stakeholders. They can, through their reputation and specialist expertise, play an important role in attracting investment to a region. Via research they throw independent light on key development issues and act as a means for independent evaluation. They are often an exporter, bringing in income to a region; but also, through their internationalisation work, they can bring major contacts into the locality and thus raise its visibility and capacity to build networks abroad. They also often act as an intermediary in articulating regional development issues to central government in areas of technology policy, education and skills development and competition policy. Overall they may take a central place in the development of many aspects of a region's culture (Gibb, Haskins, and Robertson 2009). There is clear evidence that across Europe universities are taking on more of the role of bridging local with global (Arbo and Benneworth 2008). Whether an individual university wishes to play a transformational role as a regional change agent is, however, an issue for its individual mission and strategy. Throughout the world there has been a gradual evolution in the way that universities are funded, as public budgets fail to take the strain of rapidly growing student numbers (Williams 2009). In reality the detail is more complex and depends upon the mix of funding.

Altogether, the financing issue is yet another central focus for entrepreneurial management, with considerable risk attached, not only of a simple resource nature. Today, universities increasingly operate within an open innovation system, interacting with firms and governmental institutions instead of being a closed research institution (Chesbrough 2003; Etzkowitz 2004).





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FIGURE 2 The basis of triple helix (adapted from Gibb, Haskins, and Robertson 2009)

A New Approach – University as an Entrepreneurial Organisation

Much emphasis has been placed by many of the referenced authors to the need for a university to be highly flexible in its response to the environment described above. The combination of different demands being made by government, still a major source of funding, via processes of quality measures rather than direct control, combined with the competitive market and stakeholder demands, have presented considerable challenges to university organisation design around the world (Pilbeam 2008).

Hannon (2008) expressed his vision of the entrepreneurial future as follows:

- The Entrepreneurial University
- The Entrepreneurial Graduate Career
- The Entrepreneurial Educator
- The Entrepreneurial Stakeholder Partner
- Delivering the Entrepreneurial Outcomes (Framework)

Focus here will be on the entrepreneurial university since that is the topic of this article. Hannon (2008) defines the entrepreneurial university as an institution with the following characteristics:

- A great environment for encouraging entrepreneurial behaviours, thinking and opportunity;
- Cross-campus approach creating access to all students;
- Multi-disciplinary working across academic faculties and departments;

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- Engages external stakeholders in the design and delivery of entrepreneurship provision;
- Has strong institutional leadership and support;
- Staff/student rewards and incentives;
- Takes a broad approach to entrepreneurship to be more than starting a business;
- Teaching focuses on *for* rather than *about* entrepreneurship.

Perhaps the most influential writer in this field, Burton Clark (2004), argues on the basis of a number of case studies, for five key components of entrepreneurial university organisation:

- A strong central steering core to embrace management groups and academics;
- An expanded development periphery involving a growth of units that reaches out beyond the traditional areas in the university;
- Diversity in the funding base, not only by use of government third stream funding but from a wide variety of sources;
- A stimulated academic heartland with academics committed to the entrepreneurial concept; and
- An integrated entrepreneurial culture defined in terms of common commitment to change.

Etzkowitz (2004), another leading writer on this issue, puts forward five propositions concerning the entrepreneurial university concept, namely that such institutions are focused upon:

- The capitalisation of knowledge;
- Managing interdependence with industry and government;
- Are nevertheless independent of any particular sphere;
- Are *hybrid* in managing the tension between independence and interdependence; and
- Embody reflexivity, involving continuous renewal of internal structures.

The observations of these writers and others can be plotted against a broader conceptual frame setting out key components of an organisation moving to cope entrepreneurially with high levels of uncertainty and complexity. Such an organisation is designed to maximise



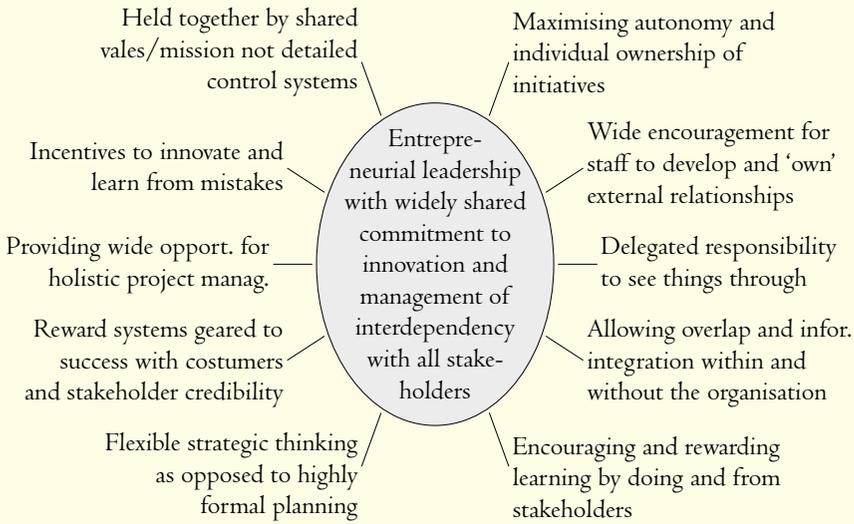


FIGURE 3 University as an entrepreneurial organization (adapted from Gibb, Haskins, and Robertson 2009)

the use of effective entrepreneurial behaviour appropriate to the task environment. Figure 3 presents such a framework for evaluation of the broad entrepreneurial challenge to university organisation design (Gibb, Haskins, and Robertson 2009).

It has been argued that, in terms of organisation, entrepreneurial universities are managed in such a way that they become capable of responding flexibly, strategically and yet coherently to opportunities in the environment. Burton Clark (1998) describes this as having a strong steering core with acceptance of a model of self-made autonomy (as opposed to it being bought by the public purse) across the academic departments. University's need to transform and change is a result of various factors, such as governmental and funding pressures, changes in the society, massification of higher education, globalization, rising number of private higher education institutions, etc. Creation of the entrepreneurial university is a result of the mentioned influences and internal development of the university itself. Governments in virtually all parts of the world are focusing on the potential of the university as a resource to enhance innovation environments and create a regime of science-based economic development (Etzkowitz and Leydesdorff

2000). A university becomes entrepreneurial in order to respond to the changes in its environment and to ensure socio-economic development, and improve its own financial situation.

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THE UNIVERSITY OF ZENICA:
AN ENTREPRENEURIAL UNIVERSITY?

Bosnia and Herzegovina has a complex political structure on three levels state, entity and canton. On the state level there is no single ministry dealing with education. The authority over education is given to the two entities: the Federation of Bosnia and Herzegovina and Republika Srpska. In Republika Srpska a single ministry of education manages the educational sector, including higher education. There are two Universities: University of Banja Luka and East Sarajevo. In the Federation of Bosnia and Herzegovina, the Federal Ministry of Education has transferred the authority of education to the ten cantons, so that each canton has its own ministry of education, which is also in charge of Higher Education. Out of the 10, only 5 cantons have Universities and these are: Sarajevo, Tuzla, Bihać, Zenica and two Universities of Mostar. No legislative or procedural mechanisms ensure the homogeneity of academic standards or allow for the comparative assessment of the performance of academic institutions. Such a situation means that higher education in Bosnia and Herzegovina faces unresolved issues of governance at the levels both of coordination and the management of institutions. In order to achieve the development goals government, structures at all levels in Bosnia and Herzegovina need to stimulate entrepreneurial mindsets of young people and foster establishment of a culture that is friendlier to entrepreneurship. Education institutions play a key role in achievement of these goals. As already mentioned, universities in Bosnia and Herzegovina have been facing the need for reforming the higher education sector, as well as all other segments of the society and economy, after signing the Dayton peace agreement. After signing the Bologna declaration by the government in Bosnia and Herzegovina, higher education institutions were facing the necessity of implementing numerous organizational changes. Universities in Bosnia and Herzegovina are traditionally teaching and research universities with a traditional organizational structure and cul-



ture. The process of transformation to entrepreneurial universities is necessary and inevitable in order to ensure the development of university and society as whole. Considering the specific constitutional and political conditions in Bosnia and Herzegovina and the ongoing higher education reform, the transformation of universities will be a hard and long-term process. In the past ten years small steps forward have been made in reform of the higher education system. A much stronger commitment towards changes is needed within the academic community itself, since the universities have been slowly adapting to the new and changing environment.

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Case Study

The subject of this research is the University of Zenica, the youngest university in Bosnia and Herzegovina, formed in October 18, 2000, by declaration of the Zenica-Doboj Canton Assembly in the Agreement on the National Law of Education. The University is comprised of seven faculties and several institutions (Metallurgical Institutes, Institutes for mechanical engineering, Institutes of Industrial Engineering, Centre for development, management and quality, Centre for Social Studies and Inter-religious projects, Science-Technology Park, ODL Centres etc.) located in the university campus in the heart of Zenica city.

As one of the first Bosnian Universities, the University of Zenica finished complete regulation for the Bologna Declaration about registration, university autonomy, ECTS system, joint chairs, quality management, university integration, etc. That means, in the case of the University of Zenica, that the University is fully integrated and faculties, institutes and centres are organizational units inside the university without formal or financial autonomy. Today, the University of Zenica counts about 5,000 students and employs more than 300 professors, assistants and other staff, full or part time.

Method

The transformation of a traditional teaching university, like the University of Zenica, depends on the ability of its management to re-define the university's mission statement, develop strategic develop-

TABLE 1 Presentation of survey results (%)

Question	Yes	No
Is the University of Zenica an entrepreneurial university?	22	78
Is the University of Zenica autonomous?	44	56
Is the academic community interested in change at the University?	44	56

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ment plans, implement the necessary organizational changes, develop and strengthen entrepreneurial organizational culture of the institution and promote the need for the transformation process in the academic community and in the public domain. In order to determine the perception of the University of Zenica and its current characteristics, a survey has been conducted (in 2010). The survey was conducted by creating a questionnaire. Questionnaires were given to the University employees. The aim was to determine the necessity, as well as the basis for a framework, for transformation towards an entrepreneurial university.

Results

The necessity of this transformation is evident when taking into consideration the fact that 78 % of questioned employees finds that the University of Zenica is not entrepreneurial and 56% stated that the University is not autonomous (table 1). One of the fundamental characteristics of an entrepreneurial university is the relationship with its stakeholders. In the survey, all of the examined employees stated that the relationship and cooperation between the University and its stakeholders is very important, which implies that they realise the importance of the university-stakeholders relationship. And when asked about the influence of the environment on the University, 89% of respondents stated that the University is influenced by trends and affected by its environment, among which 33% stressed the negative environmental influences on the University itself. Considering the fact that two thirds (66%) of the examinees pointed out the positive influence of the environment on the University, it becomes clear that the university-stakeholders relationship is not much disturbed. Therefore, it is important for the University to use this as an advantage and to regain, where needed, a closer cooperation with its stakeholders, especially with external stakeholders. In order to answer to these challenges



and use environmental influences to its advantage, the University of Zenica needs to become more entrepreneurial.

An entrepreneurial university should deliver attractive, innovative and business-oriented knowledge to its students. The results of the survey show that 78% of University employees think that the knowledge transferred to students at the University of Zenica is not compatible with the needs of the business environment. And, they all think that modernization of the curricula is needed. From this we can conclude that modernization of the curricula is inevitable and it should be based on the practical, innovative knowledge while, at the same time, preparing the students for the modern business world and practices.

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The University of Zenica needs to implement the necessary changes in order to resolve the mentioned problems. According to the results of the survey, 56% of questioned employees think that the academic community is interested in change at the University (table 1). This means that there are enough academics who are willing to make changes and to make the breakthrough toward an entrepreneurial university. But still, according to the current situation, academia needs encouragement and motivation. In order to successfully implement organizational changes and experience development, management of the University needs to encourage changes and accent their benefits for the institution and its employees.

CONCLUSION

The university is one of the world's most durable institutions and now it must pass a complex new test. The new quality of international competition dramatically changes the role and function of universities and research systems. An entrepreneurial university can mean three things (Röpke 1998):

- 1 The university itself, as an organization, becomes entrepreneurial.
- 2 The members of the university (faculty, students, employees) are turning themselves somehow into entrepreneurs.
- 3 The interaction of the university with the environment, the structural coupling between university and region, follows entrepreneurial patterns.

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To achieve the second, the first must be accomplished. And to achieve the third, the second is necessary. All three together are necessary and sufficient conditions to make an university *entrepreneurial*. In theory, entrepreneurship becomes part of the university's core strategy, so that the ultimate outcome is the creation of an *enterprise culture*, defined particularly as one open to change and to the search for, and exploitation of, opportunities for innovation and development (Gibb 2005).

In the midst of crisis it is important to support all contributors to an entrepreneurial economy. Universities as centres for knowledge creation and diffusion can be leveraged to generate future economic growth. The main question – *What kind of a university do we need today?* – has a rather simple answer, a university which will meet the needs of a dynamic and turbulent working and life environment in the best way. The University must become entrepreneurial in order to ensure its development. The need for strengthening relations between the universities, business sector and government is evident. An entrepreneurial university should ensure building of its sustainability, and become a desirable partner for the business and government sector. In order to achieve the mentioned goals, a university needs to be unique, autonomous, and responsible towards its environment. This is the only way for universities to be able to respond faster and in a better manner to changes in the environment, produce practical, business-oriented knowledge, educate people who will be able to manage their own careers, deal with the reality and complexity of the business world, and contribute to the society's development.

Analysis of the University of Zenica indicates that the University of Zenica is still somewhat far from becoming an entrepreneurial one. This is mostly because of some key problems, like low level of university autonomy, difficult financial situation, inadequate organization and management capacities, lack of compatibility of the mission and development goals of the university, curricula, and compatibility of transferred knowledge. There are a number of activities which need to be undertaken. Some of them include activities aimed at: stimulation and encouragement of the process of change at the University, increase of institutional autonomy, change of the financing system of



higher education institutions, creation of innovative, business-oriented curricula, introduction of up-to-date teaching methods, and activities aimed at strengthening the university-stakeholder relationship.

All change may not be good. All continuity may not be bad. That means that a blunt and unstructured transformation of the university can result in reduction in prestige, decrease in academic quality, uncertain long term financial performance, and reduction in the number of students and sponsors. The transformation of a university into an entrepreneurial one must be adequately managed and controlled.

Creation of an entrepreneurial culture in a university environment is a complex task and a long-term process that requires the efforts of many dedicated individuals. All of them need to understand what an entrepreneurial university is, and how important it is for the socio-economic development of a society. These individuals are located in industry, academia, and government, and often are only loosely coordinated with one another in their activities. But they all should share a common passion to provide new and expanded opportunities for the state's economy and citizens.

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Résumés

Développement des compétences de l'entrepreneuriat

VALERIJ DERMOL

L'apprentissage de l'entrepreneuriat semble favoriser son émergence ainsi que les initiatives entrepreneuriales parmi les étudiants et les diplômés de l'enseignement supérieur. Le modèle de l'apprentissage de l'entrepreneuriat présenté dans cet article s'articule autour de cinq aspects – les compétences entrepreneuriales, l'auto-efficacité, l'intention entrepreneuriale, l'auto-entreprise ou le comportement entrepreneurial et les méthodes d'enseignement. Nous supposons que c'est la combinaison des compétences entrepreneuriales et de l'auto-efficacité qui encourage les intentions entrepreneuriales. D'autre part, un agencement de méthodes d'apprentissage appropriées pouvant fonctionner comme des variables modératrices favorise le processus d'apprentissage et améliore les compétences entrepreneuriales. Le modèle suppose également que les étudiants et les diplômés plus compétents ont, de manière générale, des intentions d'entreprise plus fortes. Dans cet article nous proposons d'un côté un modèle d'apprentissage de l'entrepreneuriat et de l'autre une approche de recherche suivie sur ce modèle, l'entrepreneuriat et les corrélations entre les différents aspects de ce modèle.

Jeux de simulation de business dans la formation de l'esprit d'entreprise des étudiants

MONIKA WAWER, MAREK MIŁOSZ, PIOTR MURYJAS,
MAGDALENA RZEMIENIAK

Les jeux de simulation de business sont une méthode effective pour apprendre comment gérer les processus d'affaires dans une entreprise moderne. Ce genre de jeux peut également aider à former et développer des compétences entrepreneuriales et à apprendre les méthodes de gestion moderne. Les étudiants peuvent par exemple jouer le rôle d'un chef d'entreprise qui doit prendre des décisions dans des conditions de concurrence sur le marché. Un diplômé qui commence à travailler comme gestionnaire se trouve dans une situation dans laquelle il est obligé de prendre le risque financier de ses propres décisions. Ces différents cas de figure montrent qu'il est nécessaire de recourir à différentes formes de formation pour les futurs gestionnaires. Les jeux de simulation de business sont évalués de manière différente par les professeurs

et les étudiants. Cet article fait état des opinions émises par les étudiants sur les jeux de simulation en tant que méthode pédagogique et présente l'analyse qui en a découlé.

[154] **Accroître l'employabilité des diplômés**

TINA GRUBER-MUECKE, NORBERT KAILER,
BERNHARD GRABNER, CORNELIA STOEGLMUELLER

La démarche empirique de cet article cherche à mettre en évidence la question suivante : L'expérience entrepreneuriale au cours des études a-t-elle une influence positive sur le recrutement des diplômés ? L'objectif de l'étude présentée ici a été d'examiner cette question en fonction des itinéraires de carrière des diplômés des Junior-Entreprises (JE). Les données de 980 diplômés ont été recueillies ; 587 de ces diplômés étaient membres actifs des JE et 393 étaient d'anciens membres. Notre étude a montré que l'expérience d'apprentissage acquise en travaillant dans une Junior-Entreprise a eu un impact sur le développement de la carrière des diplômés universitaires concernés. L'aspect apprentissage et développement a également été une caractéristique intéressante dans la procédure d'évaluation. Les résultats semblent être une bonne façon de mettre en confrontation les entrepreneurs avec ce qu'ils peuvent apporter ainsi qu'avec des perspectives d'amélioration et de discussion. Les résultats indiquent également que l'impact positif des stratégies d'enseignement et d'apprentissage dans une Junior-Entreprise sur le développement des compétences de base et des atouts personnels, était plus fort chez les Entrepreneurs que chez les Alumni.

Apprentissage de l'esprit d'entreprise et stratégies d'apprentissage des étudiants de première année de commerce dans l'enseignement supérieur

MARJA-LIISA KAKKONEN

Cette étude qualitative a analysé l'apprentissage de l'esprit d'entreprise et les stratégies d'apprentissage des étudiants en commerce international en Finlande. Les principaux objectifs de l'étude étaient de savoir ce que les étudiants en commerce apprenaient en matière d'entrepreneuriat et quelles stratégies d'apprentissage ils mettaient en place au cours de la première année de leurs études. En termes de compétences génériques, les résultats ont montré que les acquis les plus communs de l'apprentissage étaient les compétences d'apprentissage ainsi que les compétences de communication et les



compétences sociales. Le bilan concernant les compétences plus spécifiques montre que ces compétences ne se situent pas uniquement dans l'acquisition des connaissances des activités des entreprises et d'entrepreneuriat mais concernent aussi d'autres sphères de compétences liées à l'entreprise. De plus, il est apparu que les stratégies d'apprentissage les plus utilisées étaient de l'ordre du cognitif mais aussi du métacognitif en ce qui concerne les étudiants de la première année.

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Élaboration de l'esprit d'entreprise à travers le programme Erasmus – le cas de l'Université Hacettepe

SELDA ÖNDEROĞLU, BUGAY TURHAN, ESİN SULTAN OĞUZ

Le programme Erasmus constitue un des outils des plus importants pour les étudiants de l'enseignement supérieur concernant le développement des compétences interpersonnelles. Il représente une partie de la période de formation continue des étudiants. Il peut relever non seulement de l'apprentissage formel mais aussi de l'apprentissage et informel. Pendant la période du programme Erasmus, les étudiants développent des compétences interpersonnelles à travers l'éducation et la formation formelles : ils assistent à des conférences, à des TP, écrivent des dissertations, font des projets et se forment aussi par le biais de l'auto-apprentissage. En outre, les étudiants acquièrent certaines compétences par l'apprentissage informel : ils vivent dans un environnement qui leur est étranger, font face à une nouvelle culture, à de nouvelles personnes, se confrontent à des problèmes d'hébergement etc. Toutes ces situations ont un rôle majeur dans la stimulation de l'esprit d'entreprise chez les étudiants car elles créent des acquisitions supplémentaires en plus de leur éducation formelle. Cette étude examine comment la satisfaction des étudiants de l'Université Hacettepe, ayant participé au programme Erasmus, peut être évaluée à travers des examens se référant à des aspects plus larges de l'esprit d'entreprise de ces mêmes étudiants pendant la période du programme. A cet effet, les attentes des 408 étudiants ayant participé au programme Erasmus ont été comparées avec leur niveau de la satisfaction après avoir terminé le programme. Le sondage a été réalisé avec 51% des étudiants Erasmus sortants ayant terminé leur période Erasmus entre les années 2006 et 2009. Leurs attentes ont été examinées suivant trois catégories : les aptitudes sociales, la compétence à développer une carrière et l'harmonisation de l'Union européenne. Les résultats indiquent que l'esprit d'entreprise en termes de vie sociale et professionnelle a pu grandir grâce l'expérience Erasmus.

Innovations dans l'enseignement de l'esprit d'entreprise : L'utilisation de la « Grille-Répertoire » (méthode « Repertory Grids ») dans le contexte des grandes écoles françaises

RITA KLAPPER

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Les outils standards pour l'enseignement de l'esprit d'entreprise incluent généralement des études de cas, des plans d'affaires et des simulations informatiques. Cet article présente des expérimentations faites en classe dans différents contextes européens, au moyen de la « Grille-Répertoire » (« Repertory Grids »), outil méthodologique de la « théorie des constructions personnelles » (Personal Construct Theory) dans l'enseignement de l'esprit d'entreprise. Cette pédagogie d'entreprise innovante trouve son fondement dans le contexte de création d'entreprise mis en place au sein même de l'enseignement supérieur français.

Vers une université entrepreneuriale

DINO ARNAUT

La mutation du système traditionnel de l'université de recherche vers un système d'université entrepreneuriale est un phénomène d'actualité. L'essor de ces mutations est dû à la réduction des financements publics des universités ainsi qu'à l'émergence du marché concurrentiel de l'éducation et de la recherche. Si les universités ne deviennent pas agents d'innovation, telles que peuvent l'être les universités entrepreneuriales, elles entraveront le développement régional et national ainsi que la compétitivité internationale. L'université de Zenica est encore une université d'enseignement, il semble cependant que la création d'une université entrepreneuriale soit nécessaire pour encourager une croissance économique durable dans cette région. L'objectif général de cet article est de souligner l'importance de l'université entrepreneuriale et d'analyser les caractéristiques actuelles de l'Université de Zenica. L'article porte également sur l'identification de ce qui est nécessaire pour aller vers une université entrepreneuriale et sur la question de la mise en œuvre de cette transformation. En outre, cet article tend à identifier les moyens et les obstacles d'un tel processus.



Povzetki

Razvoj podjetniških kompetenc

VALERIJ DERMOL

Zdi se, da učenje podjetništva spodbuja pojav podjetništva in podjetniškega vedenja med študenti in podiplomskimi študenti v visokošolskih institucijah. Model učenja podjetništva, ki je opisan v tem članku, je sestavljen iz petih elementov: podjetniških kompetenc, samoučinkovitosti, podjetniškega namena, samozaposlitve ali podjetniškega vedenja in metod poučevanja.

Predpostavljamo, da podjetniške namene spodbuja kombinacija podjetniških kompetenc in samoučinkovitosti. Na drugi strani pa kombinacija primernih metod poučevanja, ki delujejo kot spremenljivke, spodbuja proces učenja in hkrati izboljša podjetniške kompetence. Model predpostavlja tudi, da imajo sposobnejši študenti in diplomanti navadno močnejše podjetniške namene. Članek torej predstavi model učenja podjetništva in hkrati predlaga pristop za nadaljnje raziskave modela, podjetništva in vezi med elementi.

Igre poslovne simulacije pri oblikovanju podjetništva študentov

MONIKA WAWER, MAREK MIŁOSZ, PIOTR MURYJAS,
MAGDALENA RZEMIENIAK

Igre poslovne simulacije podjetništva so učinkovita metoda učenja, kako voditi poslovne procese v modernih podjetjih. Tovrstne igre lahko pripomorejo tudi k oblikovanju in razvoju podjetniškega vedenja in pomagajo pri učenju metod modernega managementa. Študenti imajo na primer priložnost, da se postavijo v vlogo poslovnega managerja, ki mora sprejeti odločitve v konkurenčnih pogojih na trgu. Ko diplomant začne delati kot manager, se znajte v situaciji, kjer mora nujno prevzeti finančno tveganje za svoje odločitve. Zato je pomembno, da uporabimo različne oblike izobraževanja za bodoče managerje. Študenti in učitelji različno ocenjujejo igre poslovne simulacije. Članek vključuje predstavitev mnenja študentov o simulacijskih igrah kot metodi poučevanja in analizo njihovega mnenja.

Povečanje zaposljivosti diplomantov

TINA GRUBER-MUECKE, NORBERT KAILER,
BERNHARD GRABNER, CORNELIA STOEGLMUELLER

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Empirični članek skuša osvetliti vprašanje, ali podjetniške izkušnje v času dodiplomskega študija vplivajo na zaposljivost diplomantov. Namen naše študije je bil preučiti to vprašanje na primeru poklicnih poti diplomantov mladinskih podjetij (Junior Entreprises). Zbrali smo podatke 980 diplomantov, od katerih jih je 587 trenutno aktivnih članov mladinskih podjetij in 393 nekdanjih članov mladinskih podjetij. Študija je pokazala, da imajo učne izkušnje, pridobljene pri delu v mladinskih podjetjih, vpliv na razvoj kariere diplomantov. Učni in razvojni vidik je prav tako zanimiva značilnost postopka vrednotenja. Pridobljeni rezultati so dober način, kako podjetnike soočiti z njihovimi lastnostmi ter z možnostmi za izboljšavo in diskusijo. Rezultati tudi kažejo, da je pozitiven vpliv, ki jih imajo učne strategije in strategije poučevanja, uporabljene v mladinskem podjetju, na razvoj osnovnih spretnosti in osebnih lastnosti, izrazitejši pri podjetnikih kot pri alumnih.

Učenje podjetništva in učne strategije študentov prvega letnika študija ekonomije

MARJA-LIISA KAKKONEN

S kvalitativno študijo smo preučevali učenje podjetništva in učne strategije študentov mednarodne ekonomije na Finskem. Glavni cilji študije so bili ugotoviti, kaj se študenti ekonomije naučijo v smislu podjetništva in katere učne strategije uporabljajo v prvem letniku študija. V smislu splošnih kompetenc so rezultati pokazali, da so najpogostejši rezultati učenja učne kompetence ter komunikacijske in družbene kompetence. Učni rezultati kompetenc, specifičnih za neki predmet, niso samo pridobitev znanja o poslovnih potezah in podjetništvu, ampak tudi različne vrste podjetniških kompetenc. Najpogosteje uporabljene učne strategije so različne kognitivne strategije, vendar študenti prvega letnika uporabljajo tudi metakognitivne učne strategije.

Razvijanje podjetniške naravnosti skozi Erasmus izkušnjo: študija primera Univerze Hacettepe

SELDA ÖNDEROĞLU, BUGAY TURHAN, ESIN SULTAN OĞUZ

Program Erasmus predstavlja eno najpomembnejših orodij študentov za razvoj večščin v medosebnih odnosih. Sestavlja del njihovega obdobja vse-



življenjskega učenja, ne samo formalnega, ampak tudi neformalnega. Med obdobjem Erasmus izmenjave študenti razvijejo veščine medosebnih odnosov skozi formalno izobraževanje in izpopolnjevanje, in sicer z obiskovanjem predavanj in praktičnih vaj, s pisanjem esejev, projektnim delom in samostojnim učenjem. Poleg tega pridobijo določene kompetence skozi neformalno izobraževanje, na primer ko živijo v drugačnem okolju, se srečajo z drugačno kulturo in ljudmi, rešujejo problem nastanitve ipd. Vse te aktivnosti igrajo pomembno vlogo pri spodbujanju podjetniškega duha med študenti, saj ustvarjajo nadaljnje izkušnje po opravljenem formalnem izobraževanju. Pričujoča študija preučuje, kako lahko zadovoljstvo študentov Univerze Hacettepe, ki so odšli na Erasmus izmenjavo, ocenjujemo glede na širše vidike podjetniškega mišljenja med obdobjem Erasmus izmenjave. Pričakovanja 408 študentov, ki so odšli na Erasmus izmenjavo, smo tako primerjali s stopnjo njihovega zadovoljstva po koncu Erasmus obdobja. Raziskava je zajela 51 % vseh študentov, ki so odšli na Erasmus izmenjavo med leti 2006 in 2009. Njihova pričakovanja smo obravnavali glede na: socialne veščine, veščine izgradnje kariere in harmonizacijo E U. Rezultati kažejo, da je Erasmus izkušnja povečala podjetniško naravnost študentov v smislu družbenega življenja in poklicne poti.

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Inovacije pri učenju podjetništva: uporaba mrežnih repertoarjev (repertory grids) v kontekstu francoskih »grandes écoles« (elitnih visokošolskih ustanov)

RITA KLAPPER

Standardna orodja za poučevanje podjetništva navadno vključujejo študije primerov, poslovne načrte in računalniške simulacije. Članek predstavlja rezultate šolskih poskusov, izvedenih v različnih evropskih kontekstih z uporabo mrežnih repertoarjev, tj. metodološkega orodja teorije osebnih konstruktov (PCT) v poučevanju podjetništva. Inovativna podjetniška pedagogika je postavljena v kontekst oblikovanja podjetij v francoskem visokem šolstvu.

Podjetniški univerzi naproti

DINO ARNAUT

Preoblikovanje tradicionalne raziskovalne univerze v podjetniško univerzo je danes pogost pojav in število takšnih preoblikovanj narašča zaradi zmanjšanja financiranja univerz iz proračunskih sredstev in zaradi pojava konkurenčnega

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trga izobraževanja in raziskav. Če univerze ne bodo postale nosilke inovacij, torej podjetniške univerze, bodo ovirale regionalni in nacionalni razvoj ter mednarodno konkurenčnost. Univerza v Zenici je še vedno izobraževalna univerza, vendar je njeno preoblikovanje v podjetniško univerzo vitalnega pomena za doseganje trajnostne ekonomske rasti v tej regiji. Glavni namen tega članka je poudariti pomen podjetniške univerze in analizirati značilnosti Univerze v Zenici. Članek obravnava vprašanje, kaj je potrebno za nastanek podjetniške univerze in kako se lotiti preoblikovanja v podjetniško univerzo. Poleg tega definira možnosti in ovire za takšno preoblikovanje.



Continued from the front inside cover

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The project intends to sustain and support the development of academic mobility, tune the academic accreditation and validation processes of university and professional education within the Union for the Mediterranean and serve as a reference to future cooperation amongst academic and professional bodies within the region for Ministerial and Institutional cooperation in line with the external dimension of the Bologna Process and the parallel initiatives established on the international level in professional qualifications and academic mobility. It should also serve as a platform of possible cooperation with the European Research Area and the ancillary initiatives which bring together the world of work with the world of academia.

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