



Disentangling competences: Interrelationships on creativity, innovation and entrepreneurship



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ABSTRACT

Creativity, innovation and entrepreneurship are recognized as crucial to foster an entrepreneurial culture, but their relationships from the competence-based approach are not yet sufficiently understood. This paper contributes to the ongoing debate on the nature of entrepreneurial competences critically analyzing the theoretical underpinnings to such interrelationships. Our literature review informs that the focus, core assumptions and educational approaches to entrepreneurial competences and the role of creativity and innovation may vary substantially depending on which educational paradigm is considered (educating 'for', 'about' and 'through' entrepreneurship). We present arguments on the adequacy of Social Cognitive Theory and Social Constructivism to explain the development of creativity, innovation and entrepreneurship (CIE) as a meta-competence. In this framework we undertake a preliminary empirical approximation to the area under study exploring how engineering students from two different socio-cultural contexts, Spain and USA, perceive CIE relationships and to what extent they believe they are developed by the education system. Empirical findings show that most students see themselves as creative people and consider that creativity is strongly related to innovation and entrepreneurship, being more convinced American than Spanish students on the relevance of creativity among entrepreneurs' competences. Moreover, their perceptions contrast with the role assigned to education, where they consider that creativity is still a pending subject in engineering education.

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1. Introduction

Creativity, innovation and entrepreneurship have been increasingly recognized as engines to foster an entrepreneurial culture, driving forward socio-economic development (Carayannis, Evans, & Hanson, 2003; EC, 2006, 2010; Kuratko, 2012;

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OECD, 2011; Wilson, 2008). The integration of these topics within the 'core competency' of educational programs has become a central theme addressing turbulent marketplaces and the complex demand of the technological and societal changes we are facing (Rover, 2005; Gattie et al., 2011; Vanevenhoven, 2013). An ongoing debate takes place at the heart of the Europe 2020 Flagship Initiative Innovation Union and OECD strategies under the general assumption of encouraging entrepreneurial competences for all students (EC, 2010; OECD, 2011). In particular, various authors point out these challenges in the engineering field, demanded to respond simultaneously to the fast scientific and technological research and the emergence of new types of innovation and entrepreneurial activities addressing societal needs and priorities (Gattie, Kellam, Schramski, & Walther, 2011; NAE, 2004). Universities are increasingly aware that they must educate graduates who not only be creative and develop useful new or improved products and services, but who are also able to identify opportunities, understand market forces and social challenges and have the skills and competences to advocate for them (Fastré & Van Gils, 2007; Morris, Webb, Fu, & Singhal, 2013).

Despite the growth experimented by entrepreneurship education in last decades (Fayolle & Klandt, 2006; Katz, 2003; Oosterbeek, Praag, & Ijsselstein, 2010; Vanevenhoven, 2013), research about the competences that can be taught and learnt to prepare students for innovation-oriented and entrepreneurial action is still scarce and scattered in a diversity of practice-oriented perspectives (Clarke & Winch, 2006; Frank, 2007; Lans, Hulsink, Baert, & Mulder, 2008; Morris et al., 2013; Winkel, 2013). Both the topics/aspects and competences considered by entrepreneurship courses are very dissimilar and with poor theoretical background (Fiet, 2001; Gorman, Hanlon, & King, 1997; Hisrich, Langan-Fox, & Grant, 2007). On the other hand, numerous researchers point out the overemphasis devoted by narrow perspectives of entrepreneurship centered in the identification of isolated traits and skills (merely behavioral or functional) rather than holistic views of competences as context-dependent constructs (Brown, 1994; Cheetham & Chivers, 1996; Radcliffe, 2005; Stoof, Martens, Van Merriënboer, & Bastiaens, 2002). Other critical point is the limited attention paid to shared perceptions and beliefs, which are not only the starting point of learning processes but also play a significant role in shaping the development of competences and entrepreneurial intention (Bandura, 1995). Students' self-beliefs can determine whether students' creativity, innovation and entrepreneurial behaviors will be expressed (or suppressed) in the classroom' and constitutes a self-judgment of one's perceived competence in generating novel and adaptive ideas, solutions and behaviors (Beghetto, 2010; Brown & Ulijn, 2004; Carayannis et al., 2003; Fayolle & Klandt, 2006). Beyond the pervasive discourses on creativity, innovation and entrepreneurship, our understanding of the conceptual backgrounds, relationships and their transference as generic competences remain unclear. In words of Zhao (2005), 'they are still fuzzy concepts that have been overlapping or hidden aspects which it is necessary to clarify'.

In response to this claim, the first aim of this study is to provide a coherent background to develop entrepreneurship from the competence-based perspective by analyzing current conceptualizations of entrepreneurial competences and 'disentangling' their interrelationships with creativity and innovation. These interrelationships are analyzed and discussed taking into account different theoretical approaches and lenses, in particular psychological traits theory, behavioral and functionalist approaches, Social Cognitive Theory (SCT) and socio-constructivism. Taking into account the relevance of self-perceptions and perceptions as facilitators or barriers hampering the development of entrepreneurial competences (that includes attitudes and predispositions to entrepreneurial action), an additional objective is to explore how students perceive CIE relationships and to what extent they believe they are developed by the education system. Moving from these premises, our research questions are:

- Which are the current definitions of entrepreneurial competences and to which extent do they consider creativity and innovation related to entrepreneurship?
- How can creativity, innovation and entrepreneurship be understood from the competence-based approach?
- To what extent do students perceive that creativity and innovation relate to entrepreneurship and are developed or improved by the education system?

In what follows, Section 2 presents various definitions of entrepreneurship and entrepreneurial competences that have been developed in the literature, and discusses the concept of generic competence. Section 3 reviews and compares different theories of entrepreneurship and their transference to education, analyzing the interrelationships between creativity, innovation and entrepreneurial (CIE) competences as an integrated construct. Section 4 describes and discusses the findings of our exploratory study and, finally, the paper ends with some concluding remarks, limitations and future lines of research.

2. The competence-based approach: a challenge for entrepreneurship education

2.1. Defining entrepreneurship and entrepreneurial competences

There is a high consensus in stating that entrepreneurship covers not only the traditional focus on the creation of new businesses but the generation of self-employment and opportunities detection, including intra-preneurship, corporate, sustainable and social entrepreneurship (Fayolle & Klandt, 2006; Lans, Biemans, Mulder, & Verstegen, 2010). Individuals, as entrepreneurs, can act independently or as part of a corporate system, creating new organizations or instigating renewal or innovation within an existing organization, generating economic, social and/or cultural value (Hoogendoorn & Pennings, 2010; Shane, 2012).

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