



Educating for the development of sustainable business models: Designing and delivering a course to foster creativity

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ABSTRACT

Incorporating entrepreneurship and sustainability as complementary entities is challenging. Within a multi-disciplinary academic context and using a case-study research approach, this paper outlines the design and delivery of an entrepreneurship course to encourage participants' lateral thinking and incorporated intelligence when developing sustainable business models. Results underline the fact that teams, which include participants with a greater diversity of academic backgrounds, tend to think and act more creatively in the conceptualization of new business models compared to less diverse teams in a similar academic context. Participants' ideas in diverse teams proved to incorporate a wider problem context in their problem-solution proposition. This underlines some conclusive evidence for a positive relationship between social learning and business development in fostering first and foremost intangible learning but also enable concrete tangible outcomes in creating new sustainability business models.

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1. Introduction

For decades, we have been exploiting our planet without taking into account the need to value ecological systems, and we are currently extracting more resources each year than the Earth can recreate within the same period (Global Footprint Network, 2015). Although the awareness of the need to value ecological systems and the natural capital required for human welfare is not new (Constanza et al., 1997), it is not yet common business practice to value natural assets, which are often considered 'free' (Bocken et al., 2014). By continuing business as usual, it seems obvious that we are accustomed to doing business in a way that cannot be sustained in the long run (Jackson, 2011). Thus, a fundamental paradigm shift appears necessary in which business activities and consumption patterns are aligned with environmental and social objectives (Short et al., 2013). Based on this holistic approach, sustainable development requires that environmental, social and economic challenges be dealt jointly and/or simultaneously (Rauter et al., 2015). In order to address this 'triple bottom line' of

sustainability, influential global actors (especially companies) can actively influence stakeholder behaviour and engagement. Society's increased expectations with regard to sustainability have paved the way for the development and diffusion of more eco-friendly technologies (Witjes and Lozano, 2016), and companies may act as catalysts or barriers with respect to clean technologies. However, many of those clean technologies have not established themselves successfully in their respective markets (Teece, 2010; Boons and Lüdeke-Freund, 2013). Besides technology, a combination of several elements into a coherent mix influences the effective implementation of a business idea (Chesbrough, 2007; Boons and Lüdeke-Freund, 2013). The core logic of a business activity is summarised under the term 'business model' and has received growing attention in literature and industry in recent years (Chesbrough, 2010; Lüdeke-Freund, 2010; Zott et al., 2011). A business model specifies how a company creates and captures value (Teece, 2010), and it is the definition of this value that determines whether sustainability issues are embedded within a firm or not (Rauter et al., 2015, p. 1). Where business models comply with the idea of sustainable development, such issues are often discussed in the context of 'green' or 'sustainable' business models (e.g. Short et al., 2013; Bocken et al., 2014). Innovating a company's business model requires systemic business model transformation, which implies the creation of a fundamentally new kind of business

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or the introduction of greater strategic variety into an existing business (Skarzynski and Gibson, 2008). Some attempts have already been made to change or create (new) business models geared towards sustainability (Stubbs and Cockling, 2008). Numerous organisations seek to identify opportunities to gain competitive advantage in a world characterised by tightening regulations, shrinking resource supplies, climate change effects and shifting social pressure (Bocken et al., 2014: 44). Companies can change their normative settings and generate concrete action (Rauter et al., 2015). In practice, the implementation of a more sustainable business model (SBM) into an existing organisational culture is often an arduous and lengthy process (Schick et al., 2002). Experience has shown that, compared to established companies, startups are more successful in finding suitable business models for new technologies in dynamic environments (Chesbrough, 2010). For a number of reasons, the promotion of sustainability in startup businesses seems to be a more promising approach. Besides the fact that new businesses do not suffer from inertia, which would prompt them to rely on established processes or existing organisational cultures, they have a distinct ability to overcome functional fixedness and a distinct flexibility to find innovative and creative solutions (Cardon and Stevens, 2004; Ruef et al., 2003). As a consequence, startups with a strong sustainability orientation may act as agents of change and could speed up the overall process of sustainable restructuring in industry and commerce.

Searching for such changes, responding to them and exploiting opportunities by creating (new) business models around an invention are the core competences of the entrepreneurship discipline (Shane and Venkataraman, 2000). Higher education plays an important role in laying the foundation for competence development for entrepreneurship (Lans et al., 2014). Hence, entrepreneurship education is an effective way to increase the supply of entrepreneurs in terms of quality and quantity (Martin et al., 2013). As a consequence, the number of institutions providing entrepreneurship education has grown steadily in recent years (Harms, 2015; Franke and Lüthje, 2004). Traditionally, entrepreneurship education most often finds its origins in business schools or technical faculties. The technological perspective often focuses on a specific invention and tries to maximize its value-generation potential by creating an adequate business around the invention. The business perspective, on the other hand, often represents a more general view of the topic by trying to evaluate different technologies and their related business models in order to identify the most promising approaches. Both perspectives put their specific knowledge to good use in analysing and valuing existing ideas. On that basis, they are also effective in enhancing an idea incrementally within its existing environment. Unfortunately, neither discipline is very familiar with finding creative, completely new and disruptive paths, which are most often the basis for the successful establishment of innovations. From an educational point of view, therefore, the challenge lies in exploring new and innovative ways to successfully cross boundaries between two disciplines and thus to connect or even go beyond their disciplinary knowledge to identify and operationalise competencies directed at the integration of entrepreneurship and sustainability. On the one hand, the range of competences encompasses skills, knowledge and attitudes which enable problem solving with respect to real-world problems, challenges and opportunities (Barth et al., 2007; Lans et al., 2014). On the other hand, identifying and solving problems in a real-life setting also relies on different abilities such as creativity, ambiguity and risk tolerance. Such abilities are commonly associated with an artistic perspective. When creating a work of art, artists often have to take the risk of pursuing new paths in insecure environments and are therefore used to thinking unconventionally (Lassig, 2013). Because creativity is often based on lateral thinking and

incorporated intelligence, the integration of an artistic view into business and technical entrepreneurship education might be considered a valuable benefit to cover the entire spectrum of relevant skills needed to create SMBs (Dentchev et al., 2016; Pellicer et al., 2016; Ramos et al., 2015). Hence, integrating the skills of artists can stimulate the establishment of a more critical, innovative and reflective culture that frequently questions its own routines, assumptions and guiding principles (Lans et al., 2014).

Universities around the world have developed specific curricula and courses in order to respond to the increasing interest in entrepreneurship education (Jansen et al., 2015; Harms, 2015). The need to integrate sustainable development into university curricula has also been recognised as essential for providing students with the skills and insights to act as future agents of change (Lozano and Lozano, 2014; Watson et al., 2013; Lozano et al., 2013; Lozano, 2010). In this respect, teaching sustainable entrepreneurship is seen as a way of generating competitive advantage by identifying sustainability as new business opportunity. Nevertheless, education and research on sustainable entrepreneurship is still in its fledgling stages at many institutions. Recent research by Lozano et al. (2015), for instance, has contributed profoundly to a more complete and systematic approach to education for sustainable development and has also stimulated discussion about teaching-related course design and delivery. However, in practice, many (sustainable) entrepreneurship courses focus heavily on a business or technical perspective (Lüthje and Franke, 2003; Franke and Lüthje, 2004). To the best of our knowledge, none of them have been based on the novel approach of involving artists in order to address sustainable entrepreneurship education holistically. The consideration of its pedagogical impacts has also received scant attention in research and practice so far. Thus, more research is needed on the aspect of creativity as well as the related teaching and learning theories (Lozano et al., 2015) in order to further stimulate the identification of, experimentation with, and eventually the realisation of sustainable entrepreneurship, specifically through SMBs (Rauter et al., 2015).

In line with the issues outlined above, the present article addresses the following research question due to its high theoretical as well as practical importance:

How should a university entrepreneurship course be designed and delivered in order to foster lateral thinking and incorporated intelligence for the development of sustainable business models?

The structure of this article is as follows: Section 2 examines and clarifies the concept of business models. In section 3, the context for developing a new and integrative sustainable entrepreneurship course is described. The focus of section 4 will be on course design and delivery, with due attention to the application of teaching and learning theories. The discussion in section 5 reflects on the main findings in a theoretical and practical context and section 6 summarises the lessons learnt and gives an outlook for future research.

2. A brief overview of sustainable business models

In recent years, business models have received substantial attention in literature and practice alike (e.g. Chesbrough, 2010; Beltramello et al., 2013; Zott et al., 2011). As a consequence, there are various perspectives on business models: Magretta (2002), Zott and Amit (2010) and Beattie and Smith (2013) holistically describe business models as 'how a firm does business', while Teece (2010) refers to business models as how the company converts resources and capabilities into economic value. According to Rasmussen (2007), a business model is concerned with how the firm defines its competitive strategy through the provision of a product or service it offers to its market, how it charges for it, what it costs to produce it, how it differentiates itself from other firms, and how the

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