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Please cite the final published version:

Thrane, C., Blenker, P., Korsgaard, S., & Neergaard, H. (2016). The promise of entrepreneurship education: Reconceptualizing the individual-opportunity nexus as a conceptual framework for entrepreneurship education. *International Small Business Journal*, 34(7), 905-924. DOI 10.1177/0266242616638422

Publication metadata

Title:	The promise of entrepreneurship education: Reconceptualizing the individual-opportunity nexus as a conceptual framework for entrepreneurship education
Author(s):	Thrane, C., Blenker, P., Korsgaard, S., & Neergaard, H.
Journal:	<i>International Small Business Journal</i> , 34(7), 905-924
DOI/Link:	https://doi.org/10.1177/0266242616638422
Document version:	Accepted manuscript (post-print)

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The promise of entrepreneurship education: Reconceptualizing the individual-opportunity nexus as a conceptual framework for entrepreneurship education

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Abstract

This article develops a conceptual framework for entrepreneurship education based on a reconceptualization of the individual-opportunity nexus as presented by Shane and Venkataraman (2000). In order to achieve this objective, we reinterpret both the basic assumptions pertaining to the individual as well as the ontological and epistemological nature of entrepreneurial opportunities. On this basis we build a six-step teaching model, which operationalizes a series of entrepreneurial learning elements. These include (I) Identity work; (II) Disclosing disharmonies; (III) Qualifying disharmonies into general anomalies; (IV) Constructing innovative concepts; (V) Prototyping; and (VI) Business modelling. Finally, we discuss the implications of the reconceptualized framework in terms of the research questions governing the field of entrepreneurship education, for the practice of entrepreneurship education, as well as for policy to promote entrepreneurship education.

Keywords:

Entrepreneurship education, entrepreneurial learning, conceptual framework, individual-opportunity nexus, teaching model

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Introduction

...entrepreneurship has become a broad label under which a hodgepodge of research is housed (Shane and Venkataraman, 2000: 217)

The rise of entrepreneurship as an academic discipline, and the implicit premise that entrepreneurship education plays a vital role in economic growth and employment, has produced a proliferation of entrepreneurship courses in higher education institutions globally (Pittaway and Cope, 2007; Martin et al., 2013; Neck and Greene, 2011). The rapid increase in entrepreneurship courses has been accompanied by growing concern regarding their fragmented nature (McMullan and Long, 1987; Sexton and Bowman, 1984; Vesper et al., 1989). This concern has been accentuated during the past three decades. Entrepreneurship courses today thus use a multitude of paradigms with disparate ontological views on the nature of entrepreneurship, different understandings of entrepreneurial learning processes, as well as a variety of didactic and pedagogical approaches to entrepreneurship education without any shared conceptual framework or distinctive domain (Béchar and Grégoire, 2005; Blenker et al., 2011; Neck and Greene, 2011). Certainly, the multitude of approaches suggests that entrepreneurship *education* - like its mother field of entrepreneurship - is a broad label under which ‘a hodgepodge of research’ *and teaching* is housed (cf. Shane and Venkataraman, 2000).

As a solution to this challenge, several scholars have argued that entrepreneurship education needs a shared conceptual framework (e.g. (Pittaway and Cope, 2007; Jones and Iredale, 2010; Blenker et al., 2011). Moreover, Fayolle (2013) explicitly argues that entrepreneurship education: “...needs robust theoretical and conceptual foundations, drawing from the fields of entrepreneurship and education to support entrepreneurship programmes and courses” (693). Indeed, entrepreneurship education and teaching rarely uses the concept of a teaching model because of this fragmented character pertaining to key philosophical and didactical dimensions (Fayolle, 2013).

The scholarly development of entrepreneurship education thus resembles the historical development in the primary field of entrepreneurship. As exemplified by the introductory quote, numerous entrepreneurship researchers advocated that the field of entrepreneurship was overly pluralistic and fragmented without any particular theoretical basis, shared definitions, and methods (Low, 2001; Fiet, 2001; Davidsson et al., 2001). Responding to this challenge, Shane and Venkataraman (2000) successfully proposed an integrating conceptual framework within the research field of entrepreneurship revolving around the nexus of entrepreneurial opportunities and

enterprising individuals (Davidsson et al., 2001; McMullen et al., 2007; Eckhardt and Shane, 2013). Even though we would assume that the level of theoretical rigour in entrepreneurship research is likely to influence the level of theoretical rigour in entrepreneurship education (Fiet, 2001), the prevailing lack of a unifying conceptual framework within entrepreneurship education suggests otherwise. One reason for this apparent translation and dissemination problem between entrepreneurship research and entrepreneurship education pertains to the macro-level of analysis in the original nexus (Fiet et al., 2013; Korsgaard et al., Forthcoming; Dimov, 2011). Therefore, we ask *how the original individual-opportunity framework can be translated from a domain perspective at the macro-level to a micro-level perspective suitable for an entrepreneurship education context.*

In order to answer this research question it is necessary to reconceptualize the ontological and epistemological nature of entrepreneurial opportunities as well as Shane and Venkataraman's original maxim of individuals as 'fully formed' and enterprising, ready to pursue entrepreneurial opportunities upon discovery. While maintaining the overall logic of the original individual-opportunity nexus, we propose three basic axioms underlying a conceptual framework for entrepreneurship education that incorporate a micro-level perspective based on a learning *through* entrepreneurship approach, which can be used for planning (didactics) and executing (pedagogy) courses in entrepreneurship education.

The paper unfolds the reconceptualized individual-opportunity nexus through an example of a detailed teaching model for entrepreneurship education, which is subsequently operationalized into a series of entrepreneurial learning elements. These elements focus on the evolving nature of entrepreneurial opportunities and identities. The learning elements comprise (i) a process of identity work including students' awareness of individual and group capabilities, means, social network, preferences, and motivation, to (ii) a process of disclosing disharmonies through a certain sensitivity towards disharmonies in the students' own everyday practices, over (iii) an explorative assessment of the generalizability of the initial disharmonies into shared anomalies, to the final process of changing disclosive spaces through (iv) the construction of innovative concepts, (v) experimentation with prototypes, and finally (vi) a process of realizing the innovative solutions through various modes of organizational arrangements and business models.

Finally, we contemplate the research questions that entrepreneurship education scholars can address based on the reconceptualized framework for entrepreneurship education, as well as the

educational and political implications of framing entrepreneurial learning within the students' own nexuses.

The individual-opportunity nexus

To a large extent, the fragmentation of the primary field of entrepreneurship, which encompassed the lack of (i) a shared conceptual framework, (ii) legitimacy, and (iii) a distinctive domain, arose from researchers' tendency to explain entrepreneurship as a function of either the individual *or* the environment (Shane, 2003; Eckhardt and Shane, 2003). Neck and Greene (2011) observe that this tendency to rely on approaches pertaining to either an individual or an environmental level of analysis with the firm as the unit of analysis, is equally evident within entrepreneurship education (see also Blenker, Elmholdt, Frederiksen, Korsgaard, and Wagner, 2014). Indeed, with a few notable exceptions (Vanevenhoven and Liguori, 2013; QAA, 2012; Blenker et al., 2015), there is scant evidence of conceptual models or frameworks in the entrepreneurship education literature that integrate the individual and the environment or opportunity perspective.

According to Neck and Greene (2011), the individual-centric perspective includes personality trait approaches as well as numerous cognitive approaches to entrepreneurship education. First, from an educational perspective, the personality trait approach is quite rigid in the sense that it mainly offers students a worldview, where they "see entrepreneurship as a box in which they either fit or do not" (Neck and Greene, 2011: 58). This is particularly prevalent in purely informative courses *about* entrepreneurship where students are often passive receptacles of information (Hannon, 2005; Rae, 2010). Second, the cognitive approaches within entrepreneurship education seek to change particular elements of the students' cognitive style, maps, scripts, or 'mind sets', and other related terminologies (Krueger Jr, 2007; Minniti and Bygrave, 2001; QAA, 2012). This oftentimes revolves around vicarious experiences, decision-making processes, cases and simulations. Even though these cognitive approaches recognize the learning *for* entrepreneurship potential among students, they tend not to respond to the contextual and episodic character of entrepreneurial behaviour that affirms the idiosyncrasy and uniqueness of entrepreneurial processes. Hence, person-centric approaches generally do not encompass learning *through* entrepreneurship by which knowledge is created through the transformation of experience from an authentic entrepreneurial process (Rae, 2010; Rae, 2005; Hannon, 2005).

The firm-centric approach to entrepreneurship education, on the other hand, has an explicit focus on the process and sub-processes of new venture creation. These types of courses are in ample

supply in most business schools featuring specific topics within e.g. industry and market analysis to educate students in discovering potential market gaps that constitute the structural foundations for lucrative entrepreneurial opportunities. This approach is equally evident in topics within organization, strategy, entrepreneurial marketing, new venture finance, and business planning to educate students in exploiting business opportunities (Hindle, 2007; Neck and Greene, 2011; Matlay and Matlay, 2006). As with the cognitive approaches, the firm-centric approach involves learning ‘for’ entrepreneurship focusing on enhancing the typical skills and competences that students need in new venture creation. Moreover, it equally fails to encompass experiential learning *through* a genuine and authentic entrepreneurial process, since it neglects the idiosyncrasies and uniqueness of the students.

In order to move the primary field of entrepreneurship from its historically narrow focus on either entrepreneurial individuals and their characteristics *or* environmental factors behind new venture creation, Shane and Venkataraman (2000) successfully offered the individual-opportunity nexus as a general framework to explain the different parts of the entrepreneurial process in a coherent way (Shane, 2012a; Venkataraman et al., 2012; Fiet et al., 2013). Accordingly, ‘...entrepreneurship involves the nexus of two phenomena: the presence of lucrative opportunities and the presence of enterprising individuals’ (Shane and Venkataraman, 2000: 218). The conceptual framework is centred on the concept of ‘entrepreneurial opportunities’ emphasizing the process of discovery, evaluation, and exploitation of opportunities while maintaining that entrepreneurship needs to deal with the individual entrepreneur as well as the entrepreneurial opportunity. Judged by the number of citations, host of seminars, and special issues, Shane and Venkataraman were very successful in their endeavour, and they managed to create a distinctive basis for much of the subsequent research in entrepreneurship (McMullen et al., 2007; Venkataraman et al., 2012; Eckhardt and Shane, 2013).

The lack of a unifying conceptual framework within entrepreneurship education suggests that the increased theoretical rigour in the primary field of entrepreneurship, centred on the individual-opportunity nexus, has had little impact on entrepreneurship education research. An obvious reason for this apparent translation and dissemination problem between entrepreneurship research and entrepreneurship education pertains to the macro-level of analysis in the original nexus (Dimov, 2011; Fiet et al., 2013; Korsgaard et al., Forthcoming). It is only natural that the theory of a mechanism on a macro-level lacks the complexity of the micro-level processes that generate aggregated outcomes (Stinchcombe, 1991). It is equally true that even oversimplified mechanisms

borrowed from the theory of macro-level phenomena can be very useful when applied to micro-level phenomena. Stinchcombe (1991) convincingly lists various social structural phenomena where the conditions necessary for the operation of rational mechanisms hold, even though they do not reflect what is actually happening at the micro-level. In these cases, the main assumptions on a micro-level phenomenon may yield new hypotheses, valuable insight, and causal predictions at the higher levels even though the research area that specializes in the micro-level phenomenon disproves the hypotheses as being oversimplified, incomplete, or imperfect. We posit this to be the case with the original individual-opportunity nexus proposed by Shane and Venkataraman (2000). Indeed, the introduction of the concept of entrepreneurial opportunities has been essential in understanding how structural components influence entrepreneurial activities and vice versa as well as the driver for some of the most stimulating research questions within the primary field of entrepreneurship (Short et al., 2010; Foss and Klein, 2010).

Nevertheless, there may be cases where more complicated and empirically adequate theories of the micro-level mechanisms are needed. This is typically the case when the errors generated by the incompleteness and oversimplification in the theory of the mechanism of a micro-level phenomenon are systematic, or because even small errors may be theoretically crucial from a micro-level perspective (Stinchcombe, 1991). Indeed, making inferences from a macro-level phenomenon to profoundly different and more complicated mechanisms at a micro-level is obviously problematic from a normative and methodological perspective. This is accentuated even further given the subjective and idiosyncratic nature of entrepreneurship as well as the normative prerequisite of a teaching model working from a micro-level where students engage in experiential learning through an entrepreneurial process. As an example, the concept of alertness that was used to denote the discovery process in Shane and Venkataraman (2000) becomes somewhat void, when translated into prescriptions for entrepreneurial action (Foss and Klein, 2012; Fiet et al., 2013). Other elements particularly relevant in a prescriptive educational setting at a micro-level include the missing elements of creativity, social interactions, and subjectivity. Hence, a conceptual framework governing entrepreneurship education requires attention to explanatory mechanisms located at the micro-level of individual action and social interaction as well as appropriate incentives to support these. Additionally, it reflects the essence of our initial research question, namely: *How the original individual-opportunity framework can be translated from a domain perspective at macro-level to a micro-level perspective suitable in an entrepreneurship education context.*

Reconceptualizing the enterprising individual for entrepreneurship education

In Shane and Venkataraman's (2000) interpretation of the nexus, entrepreneurs enter the entrepreneurial process as alert individuals ready to engage in the entrepreneurial process upon discovery of a lucrative opportunity. Some individuals are more disposed to and capable of entrepreneurship pre-hoc, and the difference between entrepreneurs and non-entrepreneurs can be identified and analysed prior to entrepreneurial activity (cf. Alvarez and Barney, 2007). Even though Shane and Venkataraman (2000) stress that entrepreneurship is transitory and not reducible to stable characteristics that differentiates entrepreneurs from non-entrepreneurs, they still maintain that there is a tendency of certain people to engage in entrepreneurial behaviour by responding to situational cues of already existing opportunities. Research has suggested that the sources of the difference between entrepreneurs and non-entrepreneurs may adhere from elements such as their genetic setup (Nicolaou et al., 2008), social capital (Stam, Arzlanian, and Elfring 2014), gender (Thébaud, 2010), education (Peterman and Kennedy, 2003), personality traits (McClelland, 1961), cognitive properties and abilities (Baron, 2006), different access to information (Kirzner, 1973), and variations in prior knowledge (Shane, 2000). Moreover, unless the opportunity costs of engaging in entrepreneurship are too high, as would be the case with e.g. highly paid executives, the transition into entrepreneurship is largely seamless. Accordingly, the entrepreneur is perceived as 'fully formed' upon entering the stage in Shane and Venkataraman's (2000) original framework.

From an entrepreneurship education perspective this view of the individual is problematic in at least three fundamental respects. First, the question of whether entrepreneurs exist as fully formed entrepreneurial individuals or not, has obvious important implications for the entire *raison d'être* of entrepreneurship education. Notwithstanding the validity and robustness in the measures used to distinguish entrepreneurs from non-entrepreneurs; what sense would this make in an entrepreneurship educational setting? As pointed out by Neck and Greene (2011), emulating the research by e.g. administering self-assessment tools to identify students with entrepreneurial characteristics essentially defeats the purpose of teaching entrepreneurship. On the contrary, enforcing the distinction between students with and without entrepreneurial potential (still maintaining an agnostic standpoint on the empirical validity of the distinction) runs the risk of alienating numerous students that for various reasons do not self-report entrepreneurial characteristics. Furthermore, entrepreneurship includes more modes of entrepreneurial opportunity exploitation than mere firm creation depending on the economic, social, political, or cultural nature of the entrepreneurial opportunity and the individual's outset within the nexus (Shane and

Venkataraman, 2000). Numerous scholars within entrepreneurship education suggest that learning *through* an entrepreneurial process and learning to behave entrepreneurially is valuable for students in many walks of life (Rae, 2009) – not just in starting a new company as epitomized in the archetypical entrepreneurial profile. This may include engaging in corporate entrepreneurship, social and political change processes, policy making, and teaching and facilitating entrepreneurship (Rae, 2010; Blenker et al., 2012; Matlay and van Gelderen, 2010). Hence, we still need to create meaningful learning experiences for students who do not fit an archetypical entrepreneurial ‘profile’ upon entering or exiting a course in entrepreneurship.

Second, even if the entrepreneurial path is a fully formed deliberate choice, as suggested by Shane and Venkataraman (2000), it oftentimes involves complicated identity work, in a transition of becoming an entrepreneur (Hoang and Gimeno, 2010; Farmer et al., 2011; Fauchart and Gruber, 2011). Identity-related questions are always particularly pertinent to students undergoing radical identity transformation on their first steps into a professional identity (Ibarra and Petriglieri, 2010). These questions are even more essential for students exploring entrepreneurship as a seemingly discontinuous professional career choice that typically deviates from other highly institutionalized academic and professional trajectories (Middleton and Donnellon, 2014; Donnellon et al., 2014; Thrane and Basaiawmoit, 2015). Hence, many if not most students who participate in entrepreneurship courses in higher education are not 'fully formed'. Instead, they are continuously in the process of finding out if they are, would like to, and have what it takes to become an entrepreneur while balancing their present student identity with a possible entrepreneurial identity (Frederiksen, 2013; Neergaard et al., 2014). Consequently, from an education standpoint, creating valuable learning experiences is best achieved by considering the ‘entrepreneur’ as someone you become through a process of identity work. Translating the nexus into the entrepreneurship education domain therefore requires us to think less about who the entrepreneur is (Gartner, 1989) and more about the circumstances under which individuals become entrepreneurial in the entrepreneurial classroom.

Third, even though Shane and Venkataraman (2000) in a footnote add that entrepreneurship can be performed “by a set of people who undertake the steps of the process collectively or independently” (219), they largely overlook the social embeddedness of entrepreneurial agency (see Korsgaard, 2013: for an overview of the critique). Indeed, new ventures are often established by entrepreneurial teams with various personalities, motivations, and competences (Harper, 2008). Consequently, entrepreneurial decision-making and action often becomes a complicated relational

process and not just an individualistic phenomenon. Additionally, the ‘student group’ is often the focal point of entrepreneurship courses. Becoming an entrepreneur (inside or outside the classroom) is often a team effort with multiple individuals taking different roles in the entrepreneurial team, where only some of the roles would require the traditional ‘entrepreneurial characteristics’ (Shepherd and Krueger, 2002; Neergaard, 2005). Moreover, the entrepreneurial individuals and teams are embedded in social structures of networks, stakeholders, and collaborators that play a decisive role in all aspects of the entrepreneurial process (Sarasvathy, 2001), including the entrepreneurial identity development process (Rae, 2005; Mueller and Anderson, 2014; Wenger, 1998).

Based on this discussion, focusing on a micro-level translation of the individual side of the nexus, we propose the first axiom defining an assumption in entrepreneurship education based on the nexus perspective:

Axiom 1: Within entrepreneurship education learning processes the students are seen as embedded in a social process of entrepreneurial identity work.

Reconceptualizing the opportunity for entrepreneurship education

While individuals represent one side of the nexus, the other side is constituted by the general conditions or structure in which entrepreneurial processes take place, and which shape and constrain these activities. In the nexus perspective, the structural component is represented by the opportunity concept. The concept of entrepreneurial opportunities has not only been essential for understanding how structural components influence entrepreneurial activities, but has also been the driver of some of the most stimulating research questions within the field of entrepreneurship (Short et al., 2010).

Shane and Venkataraman (2000) conceptualize opportunities as objectively existing prior to the entrepreneurial process. This perspective is grounded in a Kirznerian discovery model of entrepreneurship in which an alert entrepreneur discovers an opportunity, grasps its profit potential, and more or less automatically pursues it for economic reasons (Kirzner, 1973). Yet, this model of objectively existing opportunities that call forth entrepreneurs with the lure of economic gains has been questioned and moderated in many ways (Korsgaard, 2013). Indeed, Shane (2000) shows how prior knowledge influences the entrepreneurial opportunities that individuals may discover from a given technology. Haynie et al. (2009) continue this line of thinking by suggesting that entrepreneurs consider their current set of available resources when evaluating opportunities. They

introduce an important distinction between third person opportunities, which may be attractive to other individuals with other resource sets, and first person opportunities that are relevant and actionable for the focal person with a given resource set. In a similar line of argument, Mathias et al. (2015) show how entrepreneurs are imprinted by formative experiences, knowledge, and values long before the entrepreneurial activity begins. This imprinting will influence how these individuals engage in entrepreneurial processes.

Numerous scholars, representing what is often referred to as the creation view, argue that opportunities do not exist prior to the entrepreneurial process, but are created in this process (Alvarez and Barney, 2007; Korsgaard, 2013). This opens up for more iterative and non-linear processes in which the entrepreneur(s) and opportunities are tightly inter-connected (Fletcher, 2006; Sarasvathy, 2001). Indeed, Korsgaard et al. (Forthcoming) suggest that only on those rare occasions, where entrepreneurial processes take place in stable environments, is the discovery view of opportunities a useful approximation. In entrepreneurial processes characterized by uncertainty and altered conditions as time passes, it is more likely that opportunities are developed through creative, experimental, and collaborative efforts. Empirical evidence for this is readily available in several case studies (Baker and Nelson, 2005; Garud and Karnøe, 2003; Alvarez et al., 2015). Therefore, as suggested earlier, Shane and Venkataraman's framework is better equipped for explaining macro-level aggregated cohorts of entrepreneurial ventures, than micro-level studies of entrepreneurial processes. They essentially translate concepts used by Kirzner to describe market level tendencies towards equilibrium into concepts to empirically describe micro-level entrepreneurial processes (Klein, 2008; Korsgaard et al., Forthcoming). Indeed, Klein argues that the translation between micro and macro overlooks the metaphorical nature of Kirzner's arguments, and thereby wrongly reifies, at the micro-level, concepts that only apply to the macro-level. This has also been referred to as 'fallacy of misplaced concreteness' (Korsgaard et al., Forthcoming).

For the purpose of translating the opportunity side of the nexus into a conceptual framework for entrepreneurship education it is not necessary to resolve the fundamental and ontological debate between the creation and discovery view. Arguably, entrepreneurial processes may involve elements of both (Alvarez and Barney, 2007). What is central, from an educational point of view, is to work with opportunities in a way that facilitates the student's learning and ability to work with entrepreneurial opportunities through an experiential learning process. Educators cannot assume in advance that students find themselves in situations where lucrative opportunities may just present themselves. Moreover, treating opportunities as objective and waiting to be discovered by an alert

entrepreneur runs the risk of creating a detached learning environment, where students engage with opportunities as academic thought experiments, without considering the extent to which the opportunities may be relevant and feasible for them as individuals (Blenker et al., 2011; Haynie et al., 2009). Research drawing on experiential learning theory furthermore proposes that deep learning requires continuity between the existing experiences, knowledge, and beliefs, and new knowledge acquired in the learning processes. As suggested by Kolb and Kolb (2005: 194): "All learning is *relearning*. Learning is best facilitated by a process that draws out the students' beliefs and ideas about a topic so that they can be examined, tested, and integrated with new, more refined ideas". Facilitating effective entrepreneurship learning thus requires the new experiential knowledge to be connected to what the students already know and have experienced. Indeed, Spinosa, Flores, and Dreyfus (1997) refer to entrepreneurship as history making through the perception of disharmonies and anomalies in our own everyday practice. Therefore, it is conducive if students are allowed to work on entrepreneurial activities that are not detached from their own prior knowledge, interests, and beliefs, their own opportunities and projects (Pittaway and Cope, 2007), as well as their own everyday practice (Spinosa et al., 1997). In the terminology of Haynie et al. (2009), the learning experience must work with first person and not third person opportunities for the nexus of individual and opportunity to be realized.

Working with the general assumption that opportunities are created offers a conceptualization of opportunity, which is ideally suited for the purpose of having students work with first person opportunities building on their past experiences, knowledge, and beliefs. The theories of effectuation and bricolage both emphasize how opportunities are created in experimenting and iterative processes using the resources and interests of the entrepreneur (Baker and Nelson, 2005; Sarasvathy, 2001; Venkataraman et al., 2012). Translating the opportunity concept of the original nexus into entrepreneurship education thus leads to the following axiom:

Axiom 2: Within entrepreneurship education learning processes, opportunities are seen as created from the experiences, means, interests, beliefs, and everyday practices of the individual student or group of students.

Reconceptualizing the entrepreneurial process for entrepreneurship education

Having reconceptualized the individual and opportunity sides of the nexus, the next logical step is to explore the entrepreneurial process and how this needs to be adapted to the setting of

entrepreneurship education. In the original nexus, the process is essentially conceptualized into a sequence of three phases: (i) discovery, (ii) evaluation, and (iii) exploitation (Shane and Venkataraman, 2000). While the nexus reasoning allows for some flow-back and iteration, the three elements are treated as analytically distinct. The process does not entail any potential for change in the component of individuals and opportunities - making the conceptual framework suited for quantitative variance studies at the macro-level. However, the assertion that entrepreneurial processes follow a certain linear sequence of events is obviously short of the complexity governing real-life entrepreneurial processes from a micro-level perspective (Baker and Nelson, 2005). As a response to this criticism, Shane (2012) clarifies that the process does not always take place in a temporally ordered way, merely that the entrepreneurial process has sub-processes dealing with discovery, evaluation, and exploitation.

Having established that in entrepreneurship education, both the students and opportunities are developed and created in dynamic and iterative processes, it is also necessary to reconceptualize the process. Entrepreneurship education needs to deal with the co-evolution of both the individual and the opportunity. Such a perspective stresses the emergent nature of the individual student and the emergent nature of his or her entrepreneurial capabilities as well as opportunities as exemplified in the entrepreneurship literature by concepts such as bricolage, co-construction, co-creation, and effectuation (Baker and Nelson, 2005; Sarasvathy, 2008).

The idea that actual entrepreneurial activities - i.e. working with opportunities - and the development of an entrepreneurial identity are tightly connected, has been promoted by many in the entrepreneurship field (Rae, 2005; Rae, 2007; Watson, 2009). Accordingly, Donnellon et al. (2014) argue that developing an entrepreneurial identity in an educational setting ideally occurs concurrently with or through venture-creation processes, and that if the student undertakes the tasks of creating a venture ‘*it is inevitable that they take on this new identity to some extent*’ (491). Consequently, the development of the entrepreneurial identity and the creation of an opportunity are essentially two sides of the same process, and doing one without the other will fail to realize the experiential learning through entrepreneurship potential. This leads to the third axiom:

Axiom 3: An entrepreneurship education learning process involves the nexus of the development of entrepreneurial identities and the creation of entrepreneurial opportunities. This development contains sub-processes.

Operationalizing the nexus into a teaching model

In order to be useful for education planning purposes, the conceptual framework has to be clearly operationalized both didactically in terms of learning goals and contents and in terms of a transparent pedagogical process. Further, to be useful as an educational framework, the axioms outlined previously as well as learning goals need further operationalization into a teaching model. Such a model contains a structure of progression with distinct and separable learning elements that mimic a real entrepreneurial process and hence support an entrepreneurial learning process. In the following, we outline how the reconceptualized individual-opportunity nexus can be pragmatically translated into such a teaching model. We neither argue that the presented process is *the* optimal nor that it is *the only* entrepreneurial learning process. We simply argue that it is *a* coherent learning process in accordance with the reconceptualization of the nexus. We have tested the process in our own teaching and found it to be meaningful and productive as a guideline for providing the essential didactics of an entrepreneurial learning process. As suggested by Saks and Gaglio (2002), it will most likely be impossible to find unanimous agreement on the teaching content of entrepreneurship education. Instead, given the inherent contextuality of the nexus foundation, we certainly assume that adaptations in the learning content and goals will be needed pertaining to differences in e.g. regional and cultural practices, students' professional and academic background, as well as potential prior industry experience (Blenker et al., 2012). Hence, educators from different disciplines are welcome to suggest or incorporate other specific learning elements (didactics) that are relevant for their particular study programmes. In this way, our suggested framework, where entrepreneurs and opportunities are co-constructed, can serve as a starting point for the future development of how an entrepreneurial learning process (pedagogy) is best designed.

In our operationalization we make use of a phenomenological approach to entrepreneurial processes in which entrepreneurs develop opportunities from disharmonies in their disclosive space. The term 'disclosive space', as used by Spinoza et al., (1997), is applied to denote "any organized set of practices for dealing with oneself, other people, and things that produces a relatively self contained web of meanings" (17). It refers to a space of possibilities that are both created and constrained by the everyday practices of students and styles that act as the basis of meaning in our everyday practices (Spinoza et al., 1997). Thus, instead of starting the entrepreneurial process by focusing only on our preconceptions of entities valorized as lucrative opportunities such as market-gaps, we maintain an initial focus on how we deal with things and ourselves through our everyday practice. Also, we maintain an individual side in which students or

groups of students are not assigned specific enterprising characteristics ex ante. The key elements of the approach, as an example of how we can develop teaching models from a reconceptualization of the original nexus, are presented below in figure 1:

Figure 1. The reconceptualization of the nexus

A more detailed example of how the reconceptualized individual-opportunity nexus can be pragmatically translated into a teaching model is presented in table 1. Maintaining that entrepreneurial processes lack temporal linearity obviously represents an oxymoron for the design of a teaching model comprising a structure of progression. However, following Shane (2012b), we merely suggest that the entrepreneurial process has certain learning elements or sub-processes, even though these processes admittedly do not always take place in a temporally ordered way. Instead, students' subjective and idiosyncratic interpretation of opportunities as well as the lack of temporal linearity suggest that learning elements or sub-processes inside and outside the classroom need to be continually adjusted (Garud and Giuliani, 2013).

>>>>>Insert Table 1 <<<<<<

The central notion within this framework is that entrepreneurship education revolves around a nexus where students learn through an entrepreneurial process of opportunity creation from the foundation of who they are, what they know, who they know, and their everyday practice

(Sarasvathy, 2001; Sarasvathy, 2008; Spinoso et al., 1997). Hence, the first and continuous step in the framework in Table 1 is about ‘identity work’ {Ibarra, 2010 #547} {Bandura, 1997 #84}. The second step is a process of disclosing disharmonies through a certain sensitivity towards disharmonies related to students’ disclosive spaces. This is based on the assumption that opportunities originate from disharmonies that do not exist independently of the students’ disclosive spaces and that without this ‘certain sensitivity’ they will not be disclosed and invoked (Spinoso et al., 1997). When disharmonies appear sufficiently pervasive they may qualify as more general anomalies in search for an innovative solution. Thus, the third step is an explorative assessment of the generalizability of the initial disharmonies into shared anomalies. Students ‘test’ whether a disharmony is shared by exploring whether a sufficient amount of other people can identify with or acknowledge the disharmony. From this comprehensive understanding of the anomaly students enter the final processes of changing disclosive spaces through the construction of innovative solutions and concepts in step 4, prototypes in step 5 {Buchenau, 2000 #167}, and finally a process of realizing the innovative solutions through various modes of organizational arrangements and business models in step 6 {Osterwalder, 2010 #866}.

Even though the learning elements are portrayed as analytically distinct it is important to maintain the nexus as a co-evolutionary process in which the individual becomes an entrepreneur as s/he transforms disclosive spaces into opportunities throughout the entire learning process. Ideally, students continually disclose disharmonies, qualify anomalies, create innovative solutions, and realize value from who they are, what they know, who they know, as well as their everyday practice throughout the entire process. In essence, the lack of temporal linearity as well as the interdependencies of learning elements is at the heart of entrepreneurship education. Hence, the teaching model is not a static description, but inevitably requires constant adjustment in the entrepreneurial classroom.

Positioned in the classic distinction of learning ‘about’, ‘for’ or ‘through’ entrepreneurship (Hannon, 2005; Pittaway and Cope, 2007; Rae, 2010), this teaching model is fundamentally based on a learning ‘through’ pedagogy. About, for, and through are, however, not necessarily approaches we should choose between, but complementary pedagogies that are often present in any entrepreneurship course. Before ‘learning through’, by applying each particular learning element to their own entrepreneurial project, students first ‘learn for’ in the sense that they practice or train their ability to use the relevant methods of opportunity creation as illustrated in Table 1. Moreover, to prepare for both the ‘training for’ and the ‘learning through’ process of this framework, students

initially learn ‘about’ the specific learning elements as well as the central theoretical background behind each particular element. This equally creates legitimacy as to why students should invest themselves further into the process. When we posit that our approach is fundamentally based on a learning ‘through’ pedagogy, the logic is that the deepest and most permanent entrepreneurial learning is created when students learn experientially through the creation of their own entrepreneurial projects. As phrased by Spinosa et al. (1997: 24): "The best way to explore disharmonies...is not by detached deliberation, but by involved experimentation". In essence then, the learning through element incorporates an action-oriented and experiential learning approach of active experimentation, concrete experience, reflective observations, and conceptualization of the student’s personal learning process (Rae, 2005; Kolb and Kolb, 2005; Pittaway and Cope, 2007). This contributes to a deep internalization of students’ learning because of the continuous identity work throughout the process. The experiential learning approach is equally manifested in the learning ‘through’ learning goals in Table 1 pertaining to each sub-process. By actual and authentic engagement, students need to demonstrate the ability to actively experiment with the various methods they have been ‘trained for’, to critically examine the theories they have been ‘taught about’, and to reflect upon their personal development process as they ‘learn through’ their entrepreneurial projects.

Discussion and Implications

In their concluding remarks Shane and Venkataraman recognized that they: “...may have offered some uncertain assumptions, potentially flawed logical arguments, or have made statements that will prove ultimately, to be inconsistent with data” (2000:224). The same obviously holds for statements, assumptions, and arguments presented in this article. However, just as Shane and Venkataraman catapulted entrepreneurship research, we believe that a re-conceptualized framework from a micro-level perspective can do the same for entrepreneurship education by providing a coherent theoretical foundation that resonates with several contemporary trends and developments in the field of entrepreneurship education. For example, our reconceptualization of the nexus is in line with a number of other developments in entrepreneurship education. These include the orientation towards broader student groups outside the traditional business school context (Hindle, 2007; Kirby, 2004), the interest in more process-based learning (Löbner, 2006; Jones and Iredale, 2010), and the attempts to incorporate elements from experiential and problem-based learning into entrepreneurship education (Matlay et al., 2012; Jones and English, 2004).

Further, Shane and Venkataraman (2000: 218) proposed three sets of research questions for entrepreneurship research based on their theoretical framework: “(1) why, when, and how opportunities for the creation of goods and services come into existence; (2) why, when, and how some people and not others discover and exploit these opportunities; and (3) why, when, and how different modes of action are used to exploit entrepreneurial opportunities”. These three research questions reflect our attempt to translate and reconceptualize: (1) the opportunity for entrepreneurship education; (2) the enterprising individual for entrepreneurship education; and (3) the entrepreneurial process for entrepreneurship education since it captures the co-creation and contingency aspect of the nexus. However, from an educational point of view translating and reconceptualizing knowledge within each of these areas from the field of entrepreneurship to an educational setting is just one important research question and task within entrepreneurship education. Another equally important research question is how this knowledge can be used to support students’ entrepreneurial learning potential maintaining the subjective and contextual nature of entrepreneurship as a nexus. This research question is not readily accessible drawing from the field of entrepreneurship. As suggested in the introduction, Fayolle (2013) explicitly argues that entrepreneurship education: “...needs robust theoretical and conceptual foundations, drawing from the field of entrepreneurship and education to support entrepreneurship programmes and courses” (693). Hence, a robust theoretical and conceptual foundation cannot be deduced from the field of entrepreneurship alone. As the main focus of this paper is the translation and reconceptualization of a conceptual framework from the field of entrepreneurship, we have not dealt in depth with educational and pedagogical issues. An issue for future research is thus to integrate research from pedagogy and education research (Fayolle and Gailly, 2008) to support this reconceptualized theoretical framework in greater detail, and to strengthen the relationship between the didactical elements and the learning process.

Our reconceptualization of the individual-opportunity nexus has a number of other implications for the practice of entrepreneurship education, as well as the policy of higher education institutions. First, in the practice of entrepreneurship education, educators are in the habit of focussing strongly on didactic questions of target group, learning goals, and course content. Educators guide and control what all students must learn; but the reconceptualized nexus accepts that each student’s starting point in the nexus, in terms of entrepreneurial identity and personal opportunities, is different. Each student, because of these differences, must therefore travel along his or her own learning path. This changes the educator’s focus from providing a common course

content to all students to facilitating a learning process that allows each student to pursue opportunities that are personally relevant. The educator can only to some extent control such a process. Further, the educator provides a platform for entrepreneurship education that translates entrepreneurship research and theory into something that is designed to create a highly personalized entrepreneurial learning process. The educator can provide a set of process elements, a shared vocabulary, an overall theoretical framework and secure fruitful feedback mechanisms, but essentially the learning process is owned and controlled by the student.

In terms of policy implications, policy makers will also experience a loss of control. Traditionally, entrepreneurship education has been seen as an important political arena, where the general idea has been that our institutions of higher education could deliver the raw material needed for innovation and economic growth. It has been assumed that through entrepreneurship education we could train students to be growth entrepreneurs and that entrepreneurship education could in this way contribute directly to the realization of political goals. In our reconceptualization of the nexus, entrepreneurship education is and must be what the students make of it. It is actually counterproductive if the policy levels try to manage and regulate too much. Thus, policy makers must accept the true notion of creative destruction. If students are set free to pursue their own particular opportunities, through a guided learning process, this will result in a broad spectrum of entrepreneurial initiatives in society. Depending on the particular nexus of each student this may result not only in high growth firms, but potentially also in social entrepreneurship initiatives, entrepreneurial activities together with existing firms, and perhaps even in cultural, social, or politically subversive activism, depending on each student's particular version of the nexus.

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Step/Theme	Learning Goals	Content and Pedagogy
I. Identity work	Describe and compare the presented theories pertaining to the role of the individual in an entrepreneurial process.	Learning about the myths concerning the individual and team roles in entrepreneurship from the reconceptualized individual-opportunity nexus building on and extending the concepts of bird-in-hand (Sarasvathy, 2008), the concept of everyday practice (Spinosa et al., 1997), the theory about identity transformations and possible selves (Ibarra and Barbulescu, 2010), as well as self-efficacy (Bandura, 1997).
	Reflect upon the characteristics of entrepreneurs.	Learning for the appreciation that all individuals possess certain entrepreneurial qualities developed in our everyday practices, puncturing the culturally embedded myth or illusion of the entrepreneur as a unique, unattainable, heroic individual and broadening the understanding of individual potential. This is obtained through a variety of exercises such as drawing an entrepreneur and discussing the qualities of this entrepreneur focusing on how these qualities can be developed and/or learnt. This is a diametrically different approach to that, which relies on role models like Steve Jobs or Bill Gates, whose success may make a similar achievement seem unattainable. The central outcome of this is student reflection on which aspects of entrepreneurship can be learnt.
	Demonstrate the ability to describe and analyse ‘who you are’, ‘what you know’, ‘who you know’, and ‘who you would like to become’ applying the presented methods.	Learning through a process of identity work including mapping their personal spectrum of resources, capabilities, prior knowledge, means, social network, preferences, and motivation as well as understanding possible selves and visualizing potential futures. Students describe themselves through their everyday practices in terms of their drivers, studies, jobs, hobbies, networks, and family. This establishes a basis for the rest of the course enabling students to identify their inherent capabilities, capabilities that they may not have realized they possessed, or capabilities that they may not have realized could be used in a new way.
II. Disclosing disharmonies	Describe and compare the presented theories pertaining to the process of disclosing disharmonies from everyday practices.	Learning about the genesis of entrepreneurial opportunities from disharmonies in our everyday practice and their disclosure based on a certain sensitivity for and engagement with everyday practices as well as the styles governing these practices (Spinosa et al., 1997). Essentially, students learn that a profound knowledge of disharmonies precedes attempts at finding creative and innovative solutions. Moreover, students learn about the overly static and reductive conception of modern academic approaches with abstract theories, and given scientific methods they are only able to reproduce our current understanding of causal relationships turning disharmonies into mere ‘standard problems’ in search for ‘standard solutions’.
	Demonstrate the ability to disclose disharmonies from the presented theories and methods using known products as exercise cases.	Learning for the ability to bridge the theories and methods of ‘identity work’ with the process of disclosing disharmonies using and extending the theories, methods, and vocabulary presented in Spinosa et al. (1997). This is obtained through an exercise where students construct narratives of relationships between the identity of a ‘fictive’ entrepreneur and his or her sensitivity towards disharmonies from everyday practices back traced from real-life cases and examples of products and services.
	Demonstrate the ability to disclose disharmonies from own everyday practices using the presented methods and to	Learning through a process of disclosing disharmonies in students’ own everyday practices using the ‘learnt about’ and ‘trained for’ method of disclosing disharmonies. The method invites a detailed description of students’ everyday practices as well as the styles governing these practices that together constitute a disclosive space. Moreover, it extents

	reflect upon and analyse that process.	the original framework in Spinoza et al. (1997) by adding questions of who is involved, what is involved in terms of objects and artefacts, and where the disharmony unfolds itself.
III. Qualifying disharmonies into general anomalies	Describe and compare the presented theories and methods pertaining to the process of qualifying disharmonies into general anomalies.	Learning about the importance of qualifying disharmonies into general anomalies from the outset of Spinoza et al. (1997). Students learn about the importance of analytical detachment to examine whether their personal disharmonies are also general anomalies of relevance for a sufficient amount of other people, and therefore represent a potential opportunity for acting entrepreneurially. Thus, students learn about the importance of engaging knowledgeable outsiders and relevant stakeholders in the qualification of disharmonies, essentially introducing elements of effectuation at an early stage in the process, extending and building upon the work of Sarasvathy (e.g. Sarasvathy, 2008).
	Demonstrate the ability to compare and analyse the applicability of various methods in exploring the generalizability of disharmonies.	Learning for the ability to assess the generalizability of disharmonies into shared anomalies using their experience with qualitative and quantitative methods from their studies. Students are asked to discuss choice of research strategy and design taking validity and reliability into consideration. These may include quasi-experiments, quantitative and qualitative cross-sectional designs, case studies, secondary data, and expert interviews.
	Demonstrate the ability to qualify their own disharmonies into general anomalies and to reflect upon the process.	Learning through a process assessing the generalizability of their disclosed disharmony into a shared anomaly. Before choosing a research strategy and design, students are asked to enhance and enrich their understanding of the identified disharmony by analysing and reflecting upon how, when, where, and why someone (who) experiences this potential anomaly.
IV. Constructing innovative solutions	Describe and compare the presented theories pertaining to the process of changing disclosive spaces through the development of innovative solutions.	Learning about articulation, cross appropriation, and reconfiguration as three generic ways to bring about changes in a disclosive space (Spinoza et al., 1997). In this view, the everyday practices and styles represent not only the genesis of entrepreneurial opportunities, but also the outcome of the entrepreneurial process. Making what is implicit explicit, articulation may bring about changes in otherwise vague, confused, or forgotten practices and styles in a disclosive space. Cross-appropriation takes place when one disclosive space adopts useful practices from another disclosive space that it could not generate on its own (Spinoza et al, 1997). Finally, reconfiguration, where a hitherto marginal aspect of the practices coordinated by a style becomes dominant, is a more substantial way in which a style that supports a disclosive space can change the ways we make sense of our everyday practices.
	Demonstrate the ability to apply cross-appropriation as a method to change disclosive spaces.	Learning for the ability to identify and list forms of practices useful in numerous disclosive spaces, oftentimes referred to as brokering knowledge from e.g. one profession or industry to another (Hargadon and Sutton, 1997). Hence, students are asked to identify and list at least ten forms of practices that have been adopted in multiple disclosive spaces including practices such as: open source, gamification, dating, and ombudsman.
	Demonstrate the ability to construct innovative solutions and to reflect upon that process.	Learning through a process of (i) imagining the disclosive space in the world after the anomaly has been solved and (ii) constructing an innovative concept that may create these changes through articulation, cross appropriation, or reconfiguration.

V. Prototyping	Describe and compare the presented theories of prototyping and their use in entrepreneurial processes.	Learning about prototyping as: "...any kind of representation, in any medium that is designed to understand, explore, or communicate what it might be like to engage with the product, space or system we are designing" (Buchenau and Suri, 2000:425). Students learn that the prototype is not just a useful tool for engaging and creating buy-ins from customers, users, potential partners, and investors, but also an important tool to advance abstract conceptions of a solution into a concrete product or service by breaking down the solution into concrete practices without ignoring or overlooking central logical steps.
	Demonstrate the ability to analyse and reflect upon the use of different categories of prototypes.	Learning for the ability to understand the strengths and weaknesses of different categories of prototypes used for exercise purposes. Students discuss and present the kind of learning and information that can be obtained from the various prototypes as well as the kind of data and feedback needed to obtain this learning.
	Demonstrate the ability to create a prototype and to reflect upon that process.	Learning through a process of creating a prototype, using any medium such as videos, storyboards, flowcharts, cardboards, or 3D printers that advance their constructed concept into a more concrete product or service by breaking down the solution into concrete practices without ignoring or overlooking central logical steps.
VI. Business modelling	Describe and compare the presented theories of business modelling.	Learning about the importance of creating, delivering, and capturing value through business models (Osterwalder and Pigneur, 2010) in order to bring about changes in disclosive spaces and realize value with an entrepreneurial opportunity - regardless of whether we are dealing with social or for-profit entrepreneurship. Moreover, students learn that the business model is a dynamic learning tool suitable for testing basic assumptions or hypotheses pertaining to the anomaly, solution, and potential stakeholders as well as the viability of the organizational arrangement. In that way the business model supports an effectual process of opportunity creation through a continuous social co-construction of opportunities with potential stakeholders (Sarasvathy, 2008).
	Demonstrate the ability to fill out the business model and reflect upon critical assumptions.	Learning for the ability to use the business model canvas (Osterwalder and Pigneur, 2010) as a dynamic learning tool using a case for exercise purposes. Students are asked to fill in the nine building blocks in the business model canvas from a case, to identify critical assumptions and hypotheses in the canvas, and discuss how they could be tested.
	Demonstrate the ability to use the business model as a dynamic learning tool and to reflect upon and analyse that process.	Learning through a process of translating their innovative solution into the nine building blocks of the business model canvas (Osterwalder and Pigneur, 2010) starting with the value proposition readily available from students' initial work on disharmonies and anomalies. After completing the first version of their business model, students learn through a process of testing their assumptions and hypotheses about potential users and customers using various qualitative and quantitative methods including prototyping.

Table 1. Exemplification of a teaching model reflecting the reconceptualized framework for entrepreneurship education.