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Providing Entrepreneurship Education to Business and Non-Business Students: A Holistic View on Different Approaches

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Abstract

Entrepreneurship education has developed to a field of great significance, since a thoroughly carried out entrepreneurship education might serve as catalyst to enable economic growth and sustainable development. This paper follows a broad understanding of entrepreneurship education and concentrates on entrepreneurship education at universities. Several strategies to foster entrepreneurship and entrepreneurial spirit are introduced and didactical possibilities are presented by practical examples, such as business simulations and the project TIMEGATE. Finally, consequences and limitations of teaching entrepreneurship with a special focus on interest profiles of business teachers are discussed critically. As a practical implication, it becomes apparent that measures of entrepreneurship education require accurate reconcilement of didactical aims, teaching methods and assessment. Additional measures such as the introduction of role models can provide another contribution to foster entrepreneurship education within the classroom.

Keywords: Entrepreneurship education, economic growth, sustainable development

Introduction

Entrepreneurs play an important role in the innovation process of modern economies. According to the European Commission (2013, pp. 5–8), the key competence `entrepreneurship´ should be embedded into curricula across primary, secondary, vocational, higher and adult education. The term 'entrepreneur' goes beyond founding new enterprises and being an employer. It includes all kinds of innovative economic activities under uncertainty. Entrepreneurship is not a specific personality trait inherent to successful entrepreneurs, but entrepreneurship may be attributed to entrepreneurs' behavior (Drucker, 2002, pp. 21–26). Entrepreneurship, in this sense, is considered as teachable and learnable, thus „everyone who can face up to decision making can learn to be an entrepreneur and to behave entrepreneurially" (Drucker, 2002, p. 26). This raises the dominant question, in which didactical settings entrepreneurship education might contribute to the learning processes of future entrepreneurs.

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In literature, there is a broad consensus that measures of entrepreneurship education show a positive impact on learners' intention towards becoming an entrepreneur (as illustrated within the reviews of Bae, Qian, Miao, & Fiet, 2014; Gorman, Hanlon, & King, 1997). As a result of this learning process students might develop a more realistic view on their entrepreneurial skill set which, in turn, can lead to a negative impact of entrepreneurship education, namely on students' intention to found an enterprise (Oosterbeek, van Praag, & Ijsselstein, 2010). Nevertheless, entrepreneurship education is considered to have a favorable influence on personality traits relevant to start-ups (Bae et al., 2014).

Given the wide range of possible measures to conduct entrepreneurship education within the classroom (e.g. business simulations, case studies, project-based learning, role plays; see also Riebenbauer & Köppel, 2009, p. 86) and the wide range of possible recipients (e.g. students of business and non-business students), entrepreneurship education offers a multitude of potential didactical settings. The aim of this research is to display how entrepreneurship might be taught effectively to both business students and students of other disciplines and to discuss challenges for teaching entrepreneurship education specifically for teachers of business education.

The research follows a compiled methodology by combining existing methods to conduct entrepreneurship education with findings regarding the teachers' interest profiles. However, providing an in-depth analysis of potential didactical settings or a checklist of recommendations for in-classroom-actions is beyond the scope of this paper. Instead, the aim of this paper is to add another perspective to the ongoing literary discourse by focusing specifically on the person of the teacher and challenges for teaching entrepreneurship education. For this purpose, four forms of autonomy are identified as main goals of entrepreneurship education (Tramm & Gramlinger, 2006) as well as necessary entrepreneurial qualities (Casson, 2003) and their capability of enhancement. Subsequently, different strategies of implementing entrepreneurship education on an institutional and supra-institutional level are discussed. Two teaching and learning settings for conducting entrepreneurship education are presented in detail: (1) The first setting focuses on how business simulations might be utilized to conduct entrepreneurship education especially for business students. (2) The second setting broadens this perspective by including non-business students, with a special focus on training at university level. Considering the dominant role of the teacher in facilitating learning processes (Hattie, 2010), challenges for teaching entrepreneurship are derived by using the RIASEC model to analyze (prospective) business teachers` interest profiles.

Planning and implementing Entrepreneurship Education

The main goal of many didactical interventions of entrepreneurship education is to foster autonomous learners (e.g. Oosterbeek et al., 2010). With regard to entrepreneurship education, Tramm and Gramlinger (2006) differentiate between four dimensions of autonomy:

1. Entrepreneurial autonomy. The autonomous entrepreneur founds and leads businesses and works for his/her own profit and risk.
2. Vocational autonomy. The intrapreneur works independently within a company and makes

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autonomous decisions based on the company's strategies and aims.

3. Self-marketing. The dimension of self-marketing adheres at the worker's ability to obtain, develop and market one's own competences within the person's vocational environment.
4. Personal autonomy. A person with personal autonomy is able of organizing his/her own life actively, adequately and in a responsible way.

Based on these four types of autonomy, entrepreneurship education is not limited to enabling learners to found and lead his/her own business (also see Drucker, 2002, p. 21), but also to work independently within an existing enterprise (as intrapreneur). All four types of autonomy build on each other: An entrepreneur must exhibit (1) entrepreneurial autonomy through founding and leading businesses, (2) vocational autonomy within all tasks associated with leading the business, (3) self-marketing in promoting his/her own vocational competences and (4) personal autonomy in being a mature and responsible citizen, capable of making autonomous decisions regarding one's own life choices. Therefore, facilitating (all four types of) autonomy can be considered a key component of entrepreneurship education.

Entrepreneurial qualities and their capability of enhancement

Entrepreneurs are generalists who have to be competent in all aspects of decision making (Casson, 2003; Drucker, 2002). Casson (2003) identifies ten main entrepreneurial qualities which the entrepreneur, as a leading organizer, should possess (see Table 1). Most decisions in the entrepreneurial context are of non-trivial nature. The challenge is that many of the skills and competences necessary to manage these decisions are scarce and distributed unequally. However, successful entrepreneurs should possess these skills or need to recruit specialists to fill their skills deficits. Therefore, delegation skills and organizational skills are also essential for entrepreneurs, even though they are not essential for the process of decision-making. With regard to entrepreneurship education, almost all of the major entrepreneurial qualities listed in Table 1 are capable of enhancement.

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Table 1
Major entrepreneurial qualities and their capability of enhancement

Quality	Essential to all non-trivial decisions	Scarce and unequally distributed	Capable of enhancement
Self-knowledge	✓		
Imagination	✓	✓	
Practical knowledge	✓		✓
Analytical ability	✓	✓	✓
Search skill	✓		✓
Foresight	✓	✓	✓
Computational skill	✓	✓	✓
Communication skill	✓		
Delegation skill		✓	✓
Organizational skill		✓	✓

Source: Casson (2003, p. 31).

Contents of appropriate entrepreneurship education can be found in numerous studies (e.g. Morris, Webb, Fu, & Singhal, 2013; Oosterbeek et al., 2010; Solomon, 2008). Based on the current literary discourse, four main aspects of entrepreneurship education can be derived (Rybnicek, Ruhri, & Suk, 2015): professional competences, behavioral and attitudinal competences, practical experience, awareness and self-assessment. However, this leaves two questions unresolved: (1) How can these aspects of adequate entrepreneurship education be enhanced methodically? (2) How can these methods be integrated into existing curricula?

Strategies for implementing entrepreneurship education

To implement entrepreneurship education in existing curricula, various approaches can be utilized, as exemplified by the case of Austrian Business Colleges (Lindner, 2009, p. 77): (1) Entrepreneurship education might be integrated as an educational principle within a whole curriculum (e.g. within the Austrian curriculum of Business Colleges). (2) Entrepreneurship education might also be integrated at the institutional level as school concept for one specific institution. As a result, various teachers and subjects at a given institution are committed to integrate methods of entrepreneurship education into their teaching practice. (3) Within a single institution, entrepreneurship education could be implemented as one focus of training amongst others (e.g. the focus 'Entrepreneurship and Management' within Austrian Business Colleges). Students opting for this specific focus will receive special training, while other students will not. (4) Finally, entrepreneurship education can be conducted as didactical interpretation of the regular curriculum. Following this paradigm, methods of facilitating entrepreneurship education are integrated into existing courses without creating new courses dedicated

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to entrepreneurship education. A comprehensive implementation of entrepreneurship education might follow different strategies simultaneously when creating an entrepreneurial learning environment.

Conducting Entrepreneurship Education

When it comes to conducting entrepreneurship education, measures are commonly limited to the higher levels of the corresponding education systems and often built on a narrow definition of entrepreneurship education by only focusing on the foundation of new enterprises (ET 2020 Thematic Working Group, 2014, p. 27). However, entrepreneurship education – in the broad sense of Tramm and Gramlinger (2006) – might be conducted for all age groups. Given the variety of possible measures of entrepreneurship education (EE), within this paper two possible settings for different groups of students at different levels of the education system are discussed: (a) a didactical setting for business students aiming at implementing entrepreneurship education into the multi-dimensional teaching and learning arrangement of business simulations and (b) a university program representing a special focus of training open for all students (business and non-business students). By following different strategies of implementation simultaneously, it is ensured that different students and their individual needs and interests are addressed by the proposed measures of entrepreneurship education.

Utilizing business simulations to conduct EE for business students.

With regard to the ten major entrepreneurial qualities (Casson, 2003, p. 31), business simulations are considered a method capable of enhancing a multitude of entrepreneurial skills (Riebenbauer & Köppel, 2009, p. 86). Business simulations, which are specifically designed for business students, can provide a valuable addition for fostering entrepreneurship education for various age groups. Business simulations can take various forms, e.g. as virtual enterprises or junior companies. These two types of business simulations are distinguished by the degree of realism of the two aspects ‘flow of goods and services’ and ‘external contacts’ (Tramm & Gramlinger, 2006).

Within a business simulation of the type of a virtual enterprise, the flow of goods and services is fictitious, while external contacts are real. Students work and learn within their own virtual enterprise and trade with other virtual enterprises run by other students at other institutions. While these external contacts are real, the flow of goods and services is fictitious as well as all transactions between the virtual enterprises (Stock & Riebenbauer, 2013). Currently, more than 7,500 virtual enterprises exist worldwide (EUROPEN-PEN International, 2016) enabling students to internationally market the product portfolios of their corresponding virtual enterprises.

Junior companies represent another form of business simulations. Within junior companies, both the flow of goods and services as well as the external contacts are real. Therefore, junior companies participate in the ‘real’ economy and require real money to fund their activities. Clear (economic) success criteria do not require as much teacher guidance as in virtual enterprises. However, a tradeoff between economic factors (e.g. being a profitable business) and pedagogic factors (e.g. individual learning aims of the students) has to be considered by the teacher.

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Both types of business simulations might also be implemented consecutively (as illustrated by Tramm & Gramlinger, 2006, p. 19). Students start with a junior company forming a practice oriented and highly motivating introduction to entrepreneurial thinking and acting. This can be followed by a virtual enterprise to engage into worldwide business activities and to illustrate complex economic relationships. However, neither form of business simulation automatically fosters entrepreneurship education. Instead, proper modelling is required: Teachers must be open towards implementing aspects of entrepreneurship education into their teaching practice. Modelling should allow for action-oriented learning, an interconnection between theory and practice and the formation of a proper entrepreneurship climate. In addition, a creative pre-phase, where students have the possibility to develop their virtual enterprises' strategy and product portfolio, can provide another entrepreneurship aspect to the model of the virtual enterprise. With proper modelling (e.g. target orientation, project management, cooperation with real-life businesses), business simulations can provide a valuable addition to facilitating entrepreneurship education within the classroom by fostering the development of all four types of autonomy (Riebenbauer, Dreisiebner, & Stock, 2016). The role of a teacher in a business simulation is of multi-dimensional nature, with the teacher acting rather as learning companion, moderator and coach than as mere conveyor of knowledge (Stock & Riebenbauer, 2013). Thus, teaching entrepreneurship with business simulations represents a challenging task for business teachers.

Utilizing special focuses of training to provide EE for all students.

A limitation of the previously discussed teaching and learning arrangements is that they are specifically designed for business students and require certain skills to participate.1 However, by definition, entrepreneurship education is not strictly limited to business majors. To reach a wider audience of students (e.g. students of medicine, pharmacy, sports, law, engineering), in 2014 the University of Graz introduced the 'Transfer Initiative for Management- and Entrepreneurship-Basics ('Basics' = in German: Grundlagen), Awareness, Training and Employability' (TIMEGATE). The program was designed as a response to the relatively low number of university students who were aiming at a career in entrepreneurship. Instead, students tended to strive toward traditional careers, mainly due to the fear of failure in the founding process (Rybnicek, Ruhri, & Suk, 2015, p. 24). According to the approaches towards entrepreneurship education (Lindner, 2009, p. 77), these measures qualify as focus of training, combining different classes for the purpose of entrepreneurship education.

Currently, students may choose from a range of 56 different courses, arranged in three modules (Basics of Business Administration and Founding, Personality and Perspective, Practice-Transfer). All persons fulfilling the general university entry qualifications may apply for TIMEGATE courses. There are no prerequisites or previous knowledge regarding the subject required. Within the program, students receive the possibility to gain insight into the process of finding a business idea, creating a business plan

[1] Nevertheless, business simulations are not strictly limited to business students, and may also be applied in other subjects to develop students' competences.

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and the process of founding a start-up company. Further special learning and teaching activities comprise startup mingle, foundation garage, idea contests or collaborations with science parks and real entrepreneurs (Rybnicek, Ruhri, & Gutschelhofer, 2015; TIMEGATE, 2017).

Challenges for Teaching Entrepreneurship Education

The previously presented settings to foster entrepreneurship education – as any other didactic setting – require students to learn in order to obtain new competences regarding a certain subject under the assistance of a teacher (didactic triangle: Meyer, 2012, pp. 457–460). A synthesis of more than 800 meta studies (Hattie, 2010) confirms the important role of the teacher in the classroom. Regarding entrepreneurship education, this raises the question whether teachers might be able to act as proper role models to cast the entrepreneurial spirit upon the students.

An investigation into a person's entrepreneurial mindset might take place with the individuals' interest profiles. One model designed to investigate a person's interest profile is the RIASEC model (Holland, 1973). The core of this model consists of six interest dimensions, which can be displayed as a hexagon (see Figure 1). An individual might have interests in the following dimensions: Realistic (doers), Investigative (thinkers), Artistic (creators), Social (helpers), Enterprising (persuaders) and Conventional (organizers).2 Dimensions situated next to each other in the hexagon have been proven to show a high correlation (e.g. persons with a high social score are often also highly artistic), whereas opposite positions in the hexagon represent a lower correlation (e.g. conventional people often score low in the artistic dimension).

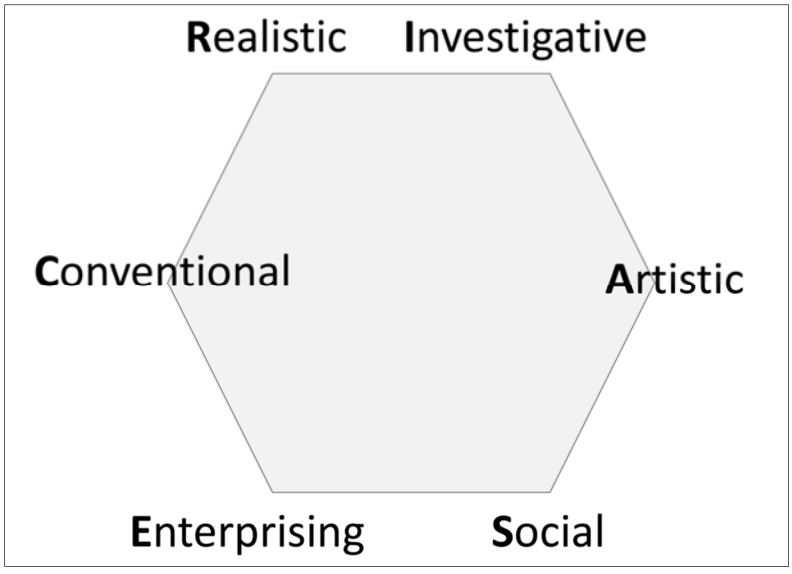

Figure 1. RIASEC model. Adapted from Holland (1973).

[2] Paraphrase of the six dimensions according to University of Missouri Career Center (n.d.).

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The individual interest profile can be obtained via standardized tests, with the majority of them originally designed for the purpose of career counselling (e.g. Bergmann & Eder, 2005; Holland, 1973; Jörin, Stoll, Bergmann, & Eder, 2003). In career counseling, the Holland model is applied to match individuals and jobs according to their interest profiles. Each person's individual interest profile is expressed by a three-letter-code, consisting of the three most distinctive interest dimensions (Holland, 1973, pp. 86–91).

For the vocation of the 'Entrepreneur' the corresponding Holland code is ESA – Enterprising, Social and Artistic (University of Missouri Career Center, n.d., p. 5). According to this code, entrepreneurs are interested in working with other people, persuading them to invest in their idea and in managing the goals of their organization (Enterprising dimension). They are also characterized as helpers who like to support people (Social dimension) and they are "creators" (University of Missouri Career Center, n.d., p. 4) who like to use their creative potential to initiate innovations (Artistic dimension).

Yet, this leaves the question unanswered whether teachers match the interest profile of a typical entrepreneur. A study regarding the vocational interests of future Austrian teachers reveals three distinctive interest-profiles (Bergmann, 2007). For this purpose, 215 university students of three different study programs (Business Education, Teacher Training STEM and Teacher Training Art) were questioned utilizing the EXPLORIX questionnaire (www.explorix.de, Jörin et al., 2003), a German adaption of Holland`s Self-Directed Search (Holland, 1973, pp. 119–131). Figure 2 shows the interest profiles for each of the three groups of teachers regarding the RIASEC dimensions, with a higher score implying a greater interest for the corresponding dimension.

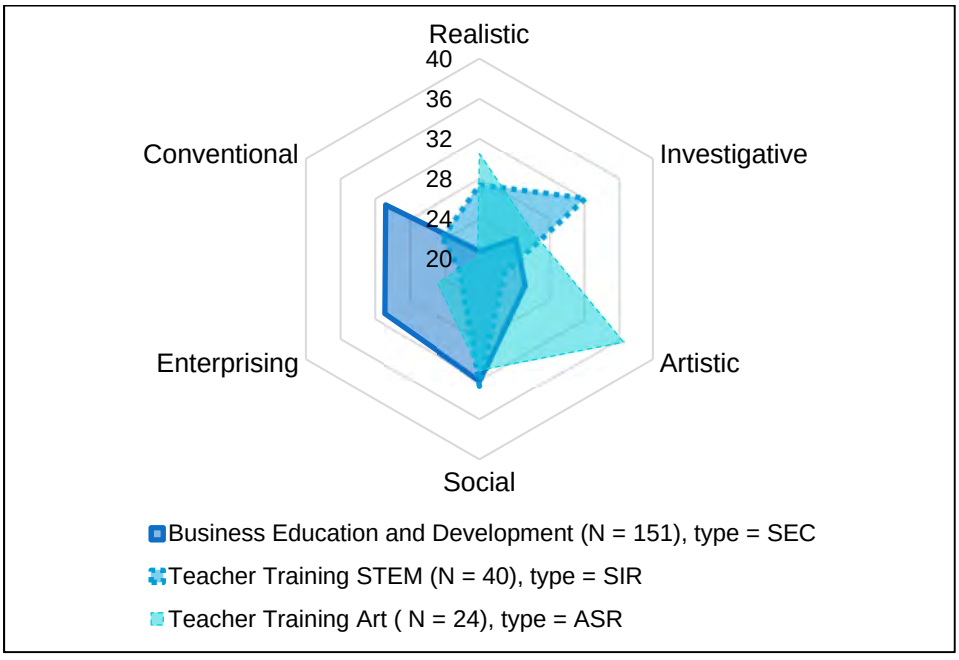

Figure 2. EXPLORIX profiles of students from different study programs. Adapted from Bergmann (2007), Data according to Bergmann (n.d.).

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Results yield the three-letter-code SEC (social, enterprising, conventional) for the students of Business Education, SIR (social, investigative, realistic) for the students of Teacher Training STEM and ASR (artistic, social, realistic) for the students of Teacher Training Art. Compared to the students of the other two programs, students of Business Education score higher in the enterprising dimension, but much lower in the artistic dimension compared to the students of Teacher Training Art. Data from the same three study programs utilizing the General Interest Structure Test (AIST, 'Allgemeiner Interessens Struktur Test') (Bergmann & Eder, 2005) confirm these results, leading to the same subtypes for the two Teacher Training programs (SIR for STEM; ASR for Art) and the (similar) three-letter-code CSE for the students of Business Education (Bergmann, n.d.).

The results for future Austrian teachers by Bergmann (2007) are in accordance with earlier findings by Campbell and Holland (1972), who found that teachers of business education are – together with bankers – the profession with the highest score on the conventional interest dimension among all examined professions. Not even accountants score as high on the conventional scale as teachers of business education. On the realistic dimension, however, teachers of business education scored particularly low. These findings regarding the interest profiles of business teachers of Campell and Holland (1972) were later confirmed by Chacko (1991).

Based on these findings it can be concluded that students of Business Education are generally interested in three dimensions viable for a 'good' business teacher – they are helpers, persuaders and organizers. But they lack the artistic (innovative, creative) interest dimension required by the entrepreneur. Instead, they are 'conventional', interested in tasks that require accurate work structured by a predetermined set of rules (e.g. bookkeeping). Figure 3 compares the Holland codes for students of Business Education (code SEC) with the code for the vocation of the 'Entrepreneur' (code ESA).

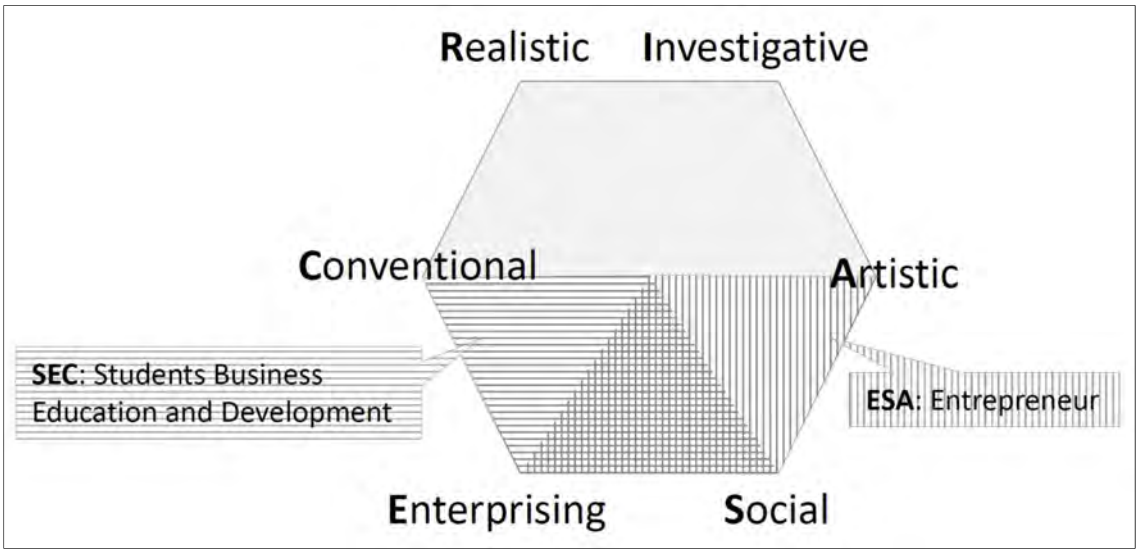

Figure 3. Holland codes for Students of Business Education (SEC) and Entrepreneurs (ESA).

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Students of Business Education and entrepreneurs alike share the enterprising and social interest dimension. However, while students of Business Education are conventional 'bookkeepers', entrepreneurs are artistic 'creators'. Within Holland's hexagon, the two dimensions artistic and conventional show the lowest correlation among all dimensions (Holland, 1973, p. 23), thus implying that it is unlikely that the 'conventional' business educators also show the 'artistic' character traits of the entrepreneurs. For teachers of business education this leads to the challenge of awakening the students' interest in becoming an entrepreneur without being an entrepreneur themselves, but rather an intrapreneur (who is defined as a person being capable of working independently within an institution and to make autonomous decisions based on the organization's strategies and aims).

Conclusion and critical appraisal

Various strategies can be followed to foster students' competence development according to a broad understanding of entrepreneurship education. Within this article, two teaching and learning settings for fostering entrepreneurship education have been described: (1) Business simulations specifically designed to improve the competences of business students and (2) a university-wide facultative focus of teaching entrepreneurship addressing all students.

Despite the differences in the didactical settings, one aspect remains constant: all aspects of the teaching and learning method must be designed with respect to entrepreneurship education. This Constructive Alignment (Biggs, 2016) covers three dimensions: 'aims of teaching and learning', 'applied methods' and 'assessment'. With the aim of fostering entrepreneurship education, it seems quite logical that the applied teaching method should be chosen in line with this specific aim. As argued by Riebenbauer, Dreisiebner and Stock (2016), business simulations might be one method to be chosen when the underlying aim is to teach entrepreneurship education. However, beside aims and methods there is also a third aspect to be considered that is, assessment. Assessment has to be adjusted to the aims and methods since learners tend to align their learning processes not towards the teacher's learning aims but towards the expected assessment. As a consequence, measures of entrepreneurship education aiming at the development of entrepreneurial qualities should also incorporate assessment specifically tailored towards the intended students' learning aims (for the assessment of multidimensional learning environments such as business simulations see Stock, Riebenbauer, & Winkelbauer, 2010).

According to Hattie (2010), teachers are the most important factor in the classroom when it comes to fostering student learning. However, as illustrated by the investigation of Bergmann (2007), the 'typical' business teacher displays an interest spectrum different from an entrepreneur. Based on this observation, one can conclude that a business teacher as an intrapreneur may certainly be the 'right' person when it comes to support students in obtaining the competencies necessary to run a successful start-up (e.g. business administration, accounting). However, this person is most likely not a suitable role model for the students when it comes to inspire people to actually become entrepreneurs through founding a start-up.

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As a practical implication, role models might be involved in entrepreneurship education for example in the form of lectures by founders or in the course of mentoring programs. Such mentoring programs have also been proven to be the most desired support measure for young founders (Ideentriebwerk Graz, 2017). In addition, mentoring programs allow for individualization by meeting the needs of special groups of students. For example within TIMEGATE, the program 'Female Academics meet Executives' (FAME) offers female students a possibility to enhance their career network (TIMEGATE, 2017). Similar measures might be also applied in business simulations, where successful start-ups can act as partner company for a virtual enterprise. Such partner companies can be used as prototype for the modelling of the virtual enterprise and their founders might serve as role models for the students.

However, business simulations or special focuses of training such as the TIMEGATE program represent just two out of many possible options to conduct entrepreneurship education in the classroom. As indicated by Riebenbauer and Köppel (2009, p. 86) there exists a multitude of possible methods, ranging from complex teaching and learning settings (e.g. business simulations, case studies, business games, project-based learning) to components which might be applied in a variety of in-classroom situations. Such components include providing feedback (to increase self-awareness of the own entrepreneurial skill-set) and providing opportunities for reflection (e.g. upon experiences gained during internships). Providing assistance to implement such didactical settings in classroom work is of great practical importance for teachers of business education.

Despite the teacher's importance in designing didactical settings and implementing the content of the curricula, the students still have an important role to play in entrepreneurship education. The competencies necessary to build up a successful enterprise cannot be taught by a teacher – instead, they have to be obtained by the students themselves through learning, with the teacher acting in the function of a learning companion, moderator or coach. Providing thoroughly designed curricula and didactical settings can act as a valuable contribution to assist teachers in their teaching and students in their learning process and to boost entrepreneurship education in the classroom. However, there is a need for further research to evaluate the impact and potentially improve the quality of already existing curricula and didactical settings with the aim of fostering entrepreneurship education.

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