

A Proposal for Improving Entrepreneurship Education for Engineering Students in Vietnam

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ABSTRACT

There have been an increasing number of young people interested in self-employment. With the innovation of technology and booming of information, they are more aware of opportunities to fill market-gaps and launch their own businesses. Therefore, many universities have been engaged in offering entrepreneurship courses to provide graduates with not only professional knowledge but also entrepreneurship abilities to increase opportunity cognition and implement creative business ideas. In alignment with the market demand for innovation development, entrepreneurship education has recently been emphasized in Vietnam. The fact that most universities are only offering entrepreneurship courses in business related majors makes engineering students have fewer chances to study entrepreneurship, thus hindering them from bringing their new concepts or products to the market. To respond to the continuously changing economy and dynamic market, graduates should be well-prepared for entrepreneurship skills regardless of their disciplines. The scope has then been extended to other engineering schools. However, Vietnamese engineering students, in general, are passive and have little tendency to gain more knowledge about how to do business. The paper proposes some areas for improvement of entrepreneurship pedagogy in motivating entrepreneurial spirits of engineering students in Vietnam universities.

Keywords: Entrepreneurship, Education, Engineering students.

1 INTRODUCTION

Owning a business has become more attractive to young and talented individuals as they possess creative ideas and often do not wish to work under the supervision of employers. The ideas vary from combining existing technologies to create a new and better product or service to inventing completely innovative solutions to solve their daily life problems. Entrepreneurship undoubtedly brings benefits to the society, economy and personal development (Fauziah, et al., 2010). It is a process in which individuals attempt to enhance knowledge, skills and attitudes to develop a business with innovative efforts (Sajilan, et al., 2015). Although it has been thought that entrepreneurs are born with a set of characteristics (Sulaiman, 2015), instincts and mindsets suitable for starting a business (Dickson, et al., 2008), a growing number of universities have been offering entrepreneurship courses to teach students how to run businesses. In Sweden, an official strategy has been employed to change curricula to enable pupils to study entrepreneurship and gain a wide range of skills from preschool to Grade 12, not only bound to business schools and higher education, since 2011 (Regeringskansliet, 2009).

Entrepreneurship education aims to provide students with the spirit and encouragement to take risks and develop their business ideas. In spite of the fact that a consensus of entrepreneurship definition has not been achieved among scholars, Heinonen & Poikkijoki (2006) try to define entrepreneurship education as the activities to “develop enterprising or entrepreneurial people and increase their understanding and knowledge about entrepreneurship and enterprise”. While entrepreneurship courses have been part of the curricula in higher education programs in North America for over fifty years and Europe for about twenty years (Wilson, 2008), it has been substantially introduced in universities in Vietnam for only less than a decade.

Entrepreneurship education has shown a demand in recent years due to the emergence of start-ups and global economic competition in Vietnam. 70 percent of Vietnam population is under 30 and they are hugely enthusiastic to adapt new business ideas to the local market (Jones & Rafael, 2016). Various government incentives and policies encourage students and fresh graduates to be more entrepreneurial in developing new businesses and in innovating existing business processes in enterprises. However, in surveys conducted by Gutterman (2011) and Wu, et al. (2016), training programs offered by the government are not of high quality and too generic to be adapted to specific markets, technologies and managements. One of the main problems that have confronted entrepreneurship educators is the lack of an accredited educational framework in entrepreneurship program and the articulation between theory and business in practice (Wagner, et al., 2006).

In line with the rapid development of technology in general and mobile computing in particular, numerous technology-based business ventures, such as location-based services, have been initiated. Entrepreneurship education responsibility therefore has been extended from business schools to a handful of engineering schools (Radharamanan & Juang, 2014). Nonetheless, students who mainly focus on technology generally struggle to find a catalyst to run their own business hence the lack of motivation in studying entrepreneurship. They seem to be comfortable sitting in front of computers to program and are unambitious to get involved in business activities or communication with real human. Furthermore, students usually approach critical thinking methods as the nature of their work, and creative problem-solving skills are significantly ignored.

It is necessary to promote entrepreneurial spirits and mindsets of students, especially in technical majors, to advance the nation’s modernization and industrialization progress. Providing prospective graduates with high entrepreneurial abilities has become a crucial and urgent task for higher education in universities.

An insight of limitations of entrepreneurship education in Vietnam universities is provided and areas for improvement in the program to foster creativity and enhance an engineering student’s entrepreneurial mindset and intention are also proposed in this paper.

2 EXISTING PROBLEMS

As mindsets, skills and personalities of an individual are the key factors that make a successful entrepreneur, the issue of whether entrepreneurship can be taught within a

university classroom has been long a matter of controversy (Fiet, 2011). Nevertheless, some universities have begun to construct training programs to enhance students' entrepreneurship ability. In the development of entrepreneurship education, there still exist problems concerning the program itself and the typical traits of students who major in engineering but are required to study a business-related course. Those concerns are discussed in the next sections.

2.1 Existing problems in entrepreneurship programs

Entrepreneurship is a combination of growth, creativity and innovation (Wilson, 2008). At present, entrepreneurship program generally focuses on teaching students how to run a business regarding marketing strategies and financial planning rather than providing practical exercises on lateral thinking. It requires well-qualified lecturers with high creative abilities to nurture students' creativity. The issue that cultivation of creativity techniques is usually overlooked in teaching entrepreneurship leads to the insufficiency in forming a full understanding of entrepreneurship.

Due to the short history of entrepreneurship education in Vietnam, some universities encounter the lack of reference resources in terms of learning materials, course syllabi and teaching methods. The research of Wu, et al. (2016) infer that major universities in Vietnam have not yet built a full entrepreneurship program to provide students with knowledge and skills required for entrepreneurial activities, but only discrete short-term courses to teach them marketing, management and finance. Furthermore, students are often taught with the normal teaching method in which they listen to 3-hour lectures and do some assignments during the course. It is difficult to establish a simulation with an experimentally virtual business environment within the scope of a classroom. The in-class activities and exercises are still grounded on theory literally/ on pure theory without a strong innovative atmosphere, therefore students have few chances to experience a harshly competitive environment. Additionally, the small number of engineering schools that are currently offering entrepreneurship means a limited quantity of historical data of graduates, hence little amount of research about the success rate of graduates and areas of the program to improve.

Students learn from successes and failures of some businesses in real cases and are inspired by role models. It is possible to invite a businessman to provide seminars or guest lectures occasionally, nonetheless, the collection of academic articles writing about successful entrepreneurs in Vietnam is limited.

While entrepreneurship may require a multi-discipline process, it is not a common practice for universities in Vietnam to offer double-degree programs. Undergraduates in a class are usually found studying the same major. The diversification of a team partially increases the chance of spotting market gaps when students are able to mix their experience and knowledge to create some valuable new ideas and business ventures.

2.2 Existing problems of engineering students in learning entrepreneurship

A survey indicates that 43 percent of freshmen in the US believe that becoming a successful entrepreneur is essentially important (Pryor & Reedy, 2009). Other studies

show that students across disciplines also desire to learn more about entrepreneurship to develop their future career (Mayhew, et al., 2012). The breakthrough development of digital business ventures requires a student to have a little knowledge in technology to be able to boost business performance and compete with other rivals. Therefore, it is a competitive advantage for engineering students, who are knowledgeable about the latest technologies, to start up and sustain a business in the digitized world.

Nevertheless, it is a challenge for engineering students to shift their mindsets from critical thinking to creative thinking, which is a crucial input to the formation of innovative ideas. Despite the fact that creativity ability is one's instinct, it is a skill that students can enhance by practicing certain techniques (Lumsdaine & Binks, 2007). In addition, observation skills are of great significance in the sense that students may have a higher chance to spinoff an idea from spotting an opportunity.

Moreover, engineering graduates, due to the nature of their majors, are not extremely required to communicate and negotiate with customers and suppliers as in business related majors. The networks of almost Vietnamese engineering students are bound to classmates mostly. They seem to be passively involved in social activities or contests which may enrich their life and working experience and help them make connections with business people.

It is defined that entrepreneurship is the study of opportunities around, the discovery, evaluation and exploitation of opportunities (Shane & Venkataraman, 2000). An entrepreneur should be able to realize and grab opportunities and to make them workable and or marketable (Kuratko, 1995). Because of the deficiency of the above skills and a narrow network, engineering students may face with difficulties in opportunity cognition and business creation.

3 SUGGESTIONS FOR THE IMPROVEMENT OF ENTREPRENEURSHIP EDUCATION

Entrepreneurship education plays a considerable role in providing prospective entrepreneurs for business innovation. Souitaris, et al. (2007) conclude that engineering students' entrepreneurial attitude and intention are obtained through entrepreneurship programs. However, universities have not mastered suitable teaching and learning methods, and a pedagogical framework in entrepreneurship education is still unclarified. More specifically, in response to the demand for entrepreneurs in the engineering industry, the responsibility of entrepreneurship education is to instill entrepreneurial spirits into engineering students, develop their creative thinking and inspire them to launch new businesses. The following sections include suggestions for the improvement of each component in entrepreneurship education for engineering students in Vietnam.

3.1 Entrepreneurship program

Curriculum of entrepreneurship programs should be modified to engage students in creative problem-solving activities. The program should also offer elective courses for students to practice and firmly build personal skills including negotiation, leadership and presentation. Entrepreneurship involves generating ideas, facilitating innovation, managing risks, negotiating with stakeholders and sustaining a business. Consequently,

attitudes and skills are as essential as knowledge in syllabus construction. The program outcomes therefore cannot be simply measured based on the number of successful start-ups after graduation only. Transferable skills and entrepreneurial behaviors of an individual should also be taken into account.

Examination should be reformed. Firstly, entrepreneurship requires thinking outside the box, which cannot be tested under the pressure of an examination. Its results probably do not reflect and facilitate the creativity of an individual. Secondly, entrepreneurship is a long-term process from idea generation to business development, from creating a prototype to bringing it to the market. Thereafter, instead of a formal examination, which inadequately evaluates a student's determination and commitment in the set-up of a business venture, students should be assessed by various criteria such as fundamental business knowledge, imagination, creativity, energizing and so on, from practical project implementation or short-term probation. Project-based courses are combined with traditional lectures. Apart from theoretical sessions, students need to do real projects and gain some experience from success or failure. Initially, students are free to choose any area of their interests and may consult the course instructors for brainstorming new ideas and analyzing the project feasibility. The topics should be different from any previous ones to avoid already discussed ideas and cultivate more new concepts. Students ought to be educated not only about producing ideas and writing a business plan, they should also be trained to maintain their constant commitment to a project. Blank (2013) describes lean start-up pedagogy as a concept in which a prototype of a product may be surveyed weekly and the feedback from target customers will be considered in the next round of the prototype development process. The process is undertaken until the final product meets all the requirements and desired customers are likely to buy it. In that way, students can also learn how to do market research and manage changes. Innovation and feasibility are the key criteria to evaluate the project results.

Academic activities should have a close relationship with business practices. The course content should be designed in a way that students can study more about inspiring real-life cases and. More academic articles about entrepreneurial cases in local areas are greatly encouraged as the laws and business environment are more familiar and easier for students to apply and adopt in their own projects. The traits of those role models are also closer to students in the same region. If the entrepreneurs were successful in start-ups under certain circumstances, students may feel more determined to implement their business ideas despite the difficulties.

3.2 Teaching methods and learning approaches

Lecturers should be able to employ an interactive teaching approach to attract more students in engineering majors to study such an inter-disciplinary program. Potishuk & Kratzer (2017) confirms that student-oriented teaching method effectively affects the entrepreneurial attitude of students. The assistance and consultancy of lecturers during the project are also of importance.

Collaborative teamwork is effective in improving learning and working experience in the education process. In higher education, teamwork, affirms Oukil (2016), benefits both individual members and the group as a whole. Moreover, the research also

highlights that universities should grow a mix of students from different majors including science, technology, arts and business so that they can share expertise and raise the chance of creativity. Students are encouraged to enroll in courses in which they have a great chance to collaborate with students from other disciplines or even other universities and engage in projects with a diverse group rather than a homogenous one. Entrepreneurial teams can benefit from the complementation of individual's skills and knowledge shortage, and confined network of each member can be expanded (Drnovsek, et al., 2009).

Engineering students in Vietnam are conventionally quiet and passive, making a higher barrier to entrepreneurial spirits. Lectures should call them for participating in workshops, seminars and conferences, especially those related to start-ups. Joining in university-level contests or regional competitions is also a good way to strengthen their spirits, knowledge and skills, and fortunately enough they can call for investments in promising projects. Lecturers should also foster networks with entrepreneurs, business practitioners, venture capital firms and business angles as part of reinforcing learning and sharing process.

A survey implies that engineering students are unclear about how entrepreneurship might reflect their future career (NESTA, 2007). It is better if entrepreneurship is introduced to engineering students early, even in their first year. Students possibly consider embarking on an entrepreneurial career path when widely exposed to entrepreneurship and innovation in the early stage. Guest lectures provided by popular role models are greatly recommended to give them a clear vision of the situations they may be in and the barriers they may have to overcome as an entrepreneur. The findings of Potishuk & Kratzer (2017) demonstrate that learners usually have a tendency to adopt the behaviors of role models who enrich their entrepreneurial intention.

Unexpected outcomes are the results of creativity process and one of the sources of creativity is divine inspiration (Lumsdaine & Binks, 2007). Regular field trips to small and medium-sized enterprises and activities invoking business process innovation may inspire students to practice creative problem-solving skills and put their hands to making an idea become a real business. Other sources of creativity include contrived luck and determinism, which means the output is produced unexpectedly during a persistent research process. For this reason, engineering students should immerse themselves into a professional environment and continuously experience trial-and-error experiments.

Last but not least, a lecturer's attitude has a strong effect on a student's performance, behavior and achievement. Lecturers, particularly those in entrepreneurship programs, are expected to have the ability to take the initiative and master the art of communication. They should be able to help students learn effectively and educate them to become lifelong learners. While knowledge and skill acquisition has limited influences on a student's behavior, inspiration is more likely to trigger his or her entrepreneurial intention to create a venture. Even though taking the plunge and doing a business with positive thinking belongs to one's personality, that sort of attitude can be instilled into students through the way a lecturer attempts to deal with troubles.

4 CONCLUSIONS

The world is witnessing the rapid development of engineering and science when innovative technologies are continuously launched to the market. Technology-based business ventures accelerate nations' economy and indirectly stimulate creativity in all aspects of life. As engineering students tend to have a little concern about entrepreneurial activities, an appropriate pedagogical framework and teaching methods should be adopted to provide students with business knowledge and raise their entrepreneurial intention. Engineering students armed with both professional knowledge and entrepreneurial skills probably achieve a higher successful rate in their future career. The paper has pointed out certain ways to improve entrepreneurship education for engineering students in Vietnam. Further experimental research may be required to evaluate the effectiveness of the above suggestions.

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