

# Chapter 12

## Entrepreneurship Education in Engineering Curriculum: Some Insights Into Students' Viewpoints

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### ABSTRACT

*Entrepreneurship education programs are commonly offered in business schools, but recently, the educationists have started recognizing the need for such programs in engineering education. This chapter is targeted to empirically explore the suitability of entrepreneurship education in engineering curriculum from the perspective of students. The study attempts to unearth the levels of willingness of engineering students to take entrepreneurial activities and investigate the factors that motivate them and the factors that deter them to go for entrepreneurship. The analysis revealed that the students are highly interested in taking entrepreneurship as a career option because of some intrinsic motivating factors such as being their own boss, chasing their dreams. They consider decision-making skills, risk-taking capacity, creativity, communication skills, and ability to prepare business plan are the most important skills. However, lack of experience and funds deter them. The right kind of entrepreneurship education programs can promote more entrepreneurial activities among the engineering students.*

### INTRODUCTION

It is well understood that entrepreneurship has a significant impact on economic growth (Carree et al., 2002). Some early researchers argued that entrepreneurs are born not bred. It is beyond the capabilities of business schools or universities to teach individuals to become more enterprising (Johannison, 1991). In general, individuals are reluctant to take entrepreneurial career, since they consider it to be highly uncertain and risky (Petridou et al., 2009). However, recent studies show that entrepreneurship can be promoted through entrepreneurship education and training (Petridou and Glaveli, 2008). The entrepreneurship education has been defined as a collection of formalized teachings that educate anyone interested in business creation (Bechard and Toulouse, 1998). The entrepreneurship education can trig-

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ger the entrepreneurial initiatives by enhancing entrepreneurial mindset among the students (Petridou et al., 2009; Lubis, 2014). A study conducted on college students in China conclude that entrepreneurship education should be included in colleges and universities' reform and development plan, personnel training system, and teaching evaluation index system (Zou, 2015). Considering the growing interest towards entrepreneurship in passing out students, many higher education institutes have started entrepreneurship education courses in their degree programs. Many higher education institutes in India such as Indian Institutes of Technology (IITs) have started Master's degree programs where the curriculum includes Engineering and Management subjects [Goel, 2013].

The need of entrepreneurship education has been well recognized by the higher education institutes. However, there is a debate on how the education should be provided, what are the students' expectations out of these entrepreneurship education programs. There is a debate about the role of universities and business schools in their contribution to entrepreneurship education (Kirby, 2004). It is argued that the traditional education system does not promote the attributes and skills that are required to produce entrepreneurs. The traditional education system teaches students how to become a good employee instead of a successful entrepreneur (Solomon, 1989). Considerable changes are required in the process of teaching and learning. Entrepreneurship should not be equated with new venture creation but with creativity and change (Kirby, 2004). There is a need to carry out more research on the way of providing the entrepreneurship education. The students are one of main stakeholders in the entrepreneurship education process. The current study is aimed to study the view point of the students: what students understand about the entrepreneurship education; what is their level of awareness and what are their concerns about the entrepreneurship education.

## **REVIEW OF LITERATURE**

### **Entrepreneurship Education Programs**

The entrepreneurship programs run by business schools equate entrepreneurship with new venture creation and educate "about" entrepreneurship rather than educating "for" entrepreneurship (Kirby, 2004). A review carried out in 123 HEIs of United Kingdom in 2006 found that the entrepreneurship education was offered at post graduate level mostly and on part-time basis. The delivery methods were traditional with little action learning or technology (Timmons, 1989). The studies conducted on effectiveness of such programs found that these programs were ineffective in creating entrepreneurial intentions. The goal of entrepreneurship education is the development of behavioral and attitudinal competencies to enable the students to see opportunities and bring them into execution (Kirby, 2007). The skill set needed to become entrepreneur include; persuasion skills, creativity, critical thinking, leadership skills, negotiation skills, problem solving skills, social networking and time management (Rae, 1997). To activate creativity and innovation, right brain thinking is required. The right brain thinking deals with uncertainties, open-ended questions, decision making with incomplete information, lateral thinking, intuitive thinking (Lewis, 1987). The entrepreneurship education programs should be designed in such a way to activate the right brain thinking of the students. Nowadays, entrepreneurship education programs use different teaching methods including lectures, guest speakers, case studies and role models (Solomon, 2007; Wilson et al., 2007). While designing the education program for entrepreneurs, the following points should be kept in mind- Student specific requirements should be understood; the teaching should be more specific to

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