Research on Entrepreneurship Education Model of Science and Engineering College Students in Beijing Municipal Universities

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Abstract. Using Beijing University of Civil Engineering and Architecture as an example and combined with the basic situation of Beijing Municipal University, this article explores the mode of entrepreneurship education for undergraduate students major in science and engineering in Beijing municipal colleges and universities. The research helps to enhance the entrepreneurship awareness among undergraduates in Beijing, improve their entrepreneurial ability, and cultivate their entrepreneurship ability. It contributes to the further improvement of the science and engineering major undergraduate students’ entrepreneurship training system Beijing municipal colleges and universities and the mode of entrepreneurship education. It is also of important and practical significance to explore the countermeasures of entrepreneurship education.

Introduction

Entrepreneurship education refers to the cultivation of individuals to have a pioneering and adventurous spirit and the improvement of their entrepreneurial ability, ability to work independently, as well as their technical, social and management skills. Since the Eighteenth National Congress of the Communist Party of China, General Secretary Xi Jinping has made a series of important speeches on the strategy of development promoted by innovation and entrepreneurship. The State Council has made clear demands for strengthening the innovation and entrepreneurship education. To cultivate undergraduate students’ innovation ability and scientific research ability towards the future ensures the provision of the intellectual support and the human capital for building an innovative country and realizing the “two one hundred year” goal together with the Chinese dream of the great rejuvenation of the Chinese nation[1].

This article explores the mode of entrepreneurship education of undergraduate students major in science and engineering in Beijing municipal colleges and universities using Beijing University of Civil Engineering and Architecture as an example combined with the basic situation of Beijing Municipal Universities. It has great practical value to strengthen the awareness of entrepreneurship, improve the entrepreneurial ability of Beijing college students, and cultivate the entrepreneurship of the college students in Beijing. It also has great practical meaning to the further improvement of the entrepreneurship training system for the undergraduate students major in science and engineering in Beijing municipal colleges and universities, the mode of entrepreneurship education, and the entrepreneurship education policies.

The Principle for Entrepreneurship Education for College Students

Colleges and universities are the places where talents are cultivated. While emphasizing the entrepreneurship education, much attention shall also be paid to the healthy development of College students in various aspects such as the moral, intellectual, and physical aspects. This article proposes that entrepreneurship education should follow the following principles:
Entrepreneurship Education Should Emphasize the Cultivation of College Students’ Positive Outlook On Life

A positive attitude can make students have a positive mentality, helping them have the ability to actively adapt to the society after their graduation, hold a flexible and positive attitude towards the social relationships. When they are in trouble, they can not only defy all difficulties, but also treat the difficulties as an opportunity.

Generally speaking, college students who have been trained in entrepreneurship are more capable in interpersonal communication, business negotiation and career planning. When dealing with other people, they can treat everyone around them with a sincere and humble attitude and be able to help others in their professional circles. They can be more generous and more humorous in life[2].

Entrepreneurship Education Should Emphasize a High Degree of Unity of Learning and Doing of College Students

Entrepreneurship education should emphasize the cultivation of the ability of self-study, self-teaching and self-doing of college students, and emphasize the high degree of unity of the ability of individual learning and the ability to apply theories into practice. It is well known that today’s college students’ setting up new businesses will face many challenges such as the fierce competitions in society, the rapid development of science and technology and the frequent change of consumers’ interests. All those challenges can expose the setting up of new businesses and the newly-established businesses with certain risks. What entrepreneurs need most at the very moment is learning. They need to learn more and much more complex and new knowledge than ever before. In the face of unpredictable future, people that know how to learn can help establish a culture of tolerance and encourage open discussion as well as the way of overall and systematic thinking in enterprises. Such type of learning organizations can adjust faster than their competitors. Therefore, the ability to learn and the ability of self-study, self-teaching and self-doing undoubtedly better suit to the needs of the knowledge economy era. They are also essential qualities and abilities for college students to start their own businesses in the future.

Entrepreneurship Education Should Emphasize the Cultivation of College Students’ Entrepreneurial Values

Entrepreneurial values play an important and guiding role in the prospective entrepreneurial activities of College students. Entrepreneurial value is the standard of people’s understanding and judgment and their choice of entrepreneurial behavior. It guides and regulates people’s entrepreneurial goals and modes[4,5].

Generally, the values of College Students’ entrepreneurial goals include five aspects: social altruism, benefits, fame and honor, self-development and spiritual pursuit. Therefore, it is necessary to emphasize the cultivation of the right entrepreneurial values in the entrepreneurship education for the college students. The right entrepreneurial values encourage students to create more jobs for the community through establishing new businesses and to create wealth for the country. Meanwhile, it can also cultivate students’ indomitable spirit and help them improve their quality and morality while subliming their spirit.

Analysis of the Current College Students’ Entrepreneurial Consciousness

In the first annual meeting of China’s University Innovation and Entrepreneurship Education Alliance in June 2017, Sun Hongbin, Secretary General of the league, issued the “Blue Book and Learning Situation Report on the Innovation and Entrepreneurship in Chinese Universities in 2016”. “83.2% of the students have a strong entrepreneurial desire, and 91.7% of the students think that they lack good innovation and entrepreneurship projects”. The data are sourced from a survey conducted by the Alliance in 130 universities throughout the country during April-May. Data show that in 2016 nearly 80% of surveyed institutions introduced a number of innovative entrepreneurship education related incentive policies and documents, more than 70% of colleges and universities carried out
teaching reforms, and more than 250 thousand students in 93.8% of colleges and universities participate in a number of innovative entrepreneurship competitions such as the “Internet+”, “Challenge Cup” and “the Creation of Youth”, involving multi-actors including the government, universities, enterprises and institutions to participate in the constructions together.

Taking Beijing University of Civil Engineering and Architecture as an example, this article investigates the current situation of the entrepreneurship consciousness of undergraduate students major in science and engineering in Beijing municipal universities. Selected questions are shown in the following table:

Table 1. Undergraduate student entrepreneurial capacity questionnaire (selected).

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
<th>Options</th>
<th>Your answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>If you choose to start a new business, what is/are your motivation *</td>
<td>A. earn more money; B. accumulate work experience; C. allow oneself to grow quickly; D. realize self-worth; E. have a job;</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>What problem(s) is/are more difficult at the early start time *</td>
<td>A. lack funds; B. lack experience; C. lack social resources; D. do not know how to choose an entrepreneurial venture;</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>When you run into difficulties, what will you do?</td>
<td>A. ask for help; B. work by his own ability; C. give up;</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Which of the following abilities or qualities do you think is most important for starting a new business? *</td>
<td>A. challenge spirit; B. interpersonal skills; C. expertise; D. leadership art; E. social relations</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Do you think you have the ability to start a new business? *</td>
<td>A. fully equipped; B. partly; C. generally no</td>
<td></td>
</tr>
</tbody>
</table>

*select one or more choices

A total of 100 questionnaires were sent out, of which 76 valid questionnaires were returned. As to “how to solve the difficulties encountered in entrepreneurship” (Question 24), 52 people chose Option C: “give up” according to the analysis of the survey, accounting for 68% of the total. As to “do you think you have entrepreneurial ability” (Question 26), 45 people selected the option C: “generally no”, accounting for 59% of the total.

A rough profile of the entrepreneurial ideas of the college students can be drawn from the survey. As can be seen, college students have a good understanding of entrepreneurship and are eager to start new businesses when the time is right. However, they lack confidence in their entrepreneurial ability, and are fear of the potential difficulties in the startup process. They are eager to receive some education on entrepreneurship, and hope the universities to create more opportunities for social practice, including the provision of resources, venues, funds, guidance on team building, and training.

Effective Measures and Suggestions for Entrepreneurship Education

Through the investigation and analysis of the current situation of college students, it is concluded that universities should have targeted entrepreneurship education. This article argues that entrepreneurship education should take the following effective measures based on over two years of research and exploration:

Construct the Curriculum System of Entrepreneurship Education and Strengthen the Practical Aspects of the Curriculum

Classroom teaching is the most basic form in higher education, and curriculum is the core of the teaching process. For a long time, the teaching content in college classrooms is old and narrow, and it only stays at the level of teaching existing knowledge. As a result, the students’ knowledge structure is unitary, they are inactive in thinking, and their practical ability is weak[6,7,8]. Therefore, it is very important to carry out the holistic reform of the teaching content and curriculum system, and it is the
key to the implementation of entrepreneurship education. As the hub and core of the systematic building of the entrepreneurship education, curriculum is the way to implement educational thoughts and training goals, and is the most important tool and means to achieve the goal of entrepreneurship education.

In the process of the implementation of entrepreneurship education, curriculum should be more practice-oriented and the role of teaching through practice should be emphasized. Curriculum being more practice-oriented should include the following aspects: (a) projects and discussion courses should be set up for the main modules of every disciplines, allowing the students to be self-motivated and creative and stimulating their enthusiasm for exploration as well as the innovation and cooperation spirits; (b) more courses focusing on the design of the experiment, the comprehensiveness of the related knowledge aspects and the cultivation of research skills should be developed to replace the experiments aiming at verification, thus enhancing the students’ ability to solve problems through using knowledge comprehensively; (c) the in-class practical trainings should be extended to extracurricular in order to change the situation that the classroom teaching and extracurricular practice are disjointed and to strengthen their ability to apply theories into practice.

The Construction of Teaching Staff for Entrepreneurship Education should be Strengthened and the Teachers’ Entrepreneurial Awareness and Ability should be Enhanced

Teachers are the main force in the cultivation of entrepreneurial talents. They can not only infect students with their own entrepreneurial spirit, encourage students to start new businesses with themselves as an example, but also can bring students into their teaching and research activities and cultivate students’ awareness of entrepreneurship and entrepreneurial ability[9]. Therefore, on the one hand, the training of teachers for entrepreneurship education needs to be emphasized in various ways, propelling the teachers to apply scientific research achievements to practice and follow the industrialization road. On the other hand, full-time teachers of entrepreneurship education courses should be trained, and they should offer elective courses across the universities.

This article argues that there are several ways of training a batch of advanced teaching staff with both advanced ideas and rich practical experience: (a) outstanding teachers can be selected to participate in entrepreneurship education teacher training classes and they are expected to introduce the new theory of entrepreneurship education and the new requirements of teachers back to school; (b) outstanding teachers can be selected to learn and exercise in enterprises through being affiliated to them and their practical skills and research skills are expected to be enhanced; (C) the enterprise managers can be introduced and appointed to take on full-time or part-time teaching workload, thus enriching and optimizing the teachers teams; (d) the high-quality entrepreneurship education teachers can be shared among peer universities and colleges and the communications among teachers across universities can be strengthened, thus effectively alleviating the shortage of teachers.

Implementing the Practice Activities and Building a Practice Platform for Entrepreneurship Education

Entrepreneurship practice is an important way to implement entrepreneurship education. It is a potential educational resource, and it can exert systematic entrepreneurial education on undergraduates deliberatively and systematically in practice. Entrepreneurial practice is an important way and means to form and develop students’ personality, develop and release students’ potential, and realize the purpose and objective of entrepreneurship education. The practice of entrepreneurship education is mainly in the following forms: (a) to carry out various forms of extracurricular activities in science and technology, promoting the cultivation of college students’ personality and their comprehensive quality; (b) to carry out social survey and practice, so that students not only learn knowledge from books, but consciously cultivate themselves to be valuable startup talents; (c) to build community activities platforms through various formats such as organizing “Entrepreneurial Salons”, “Entrepreneurial Forums” and “Talent Forums” and establishing “Entrepreneurial Clubs”, so that the students can receive as much entrepreneurial education as possible.
Entrepreneurship education is an important part of the training of compound talents in universities. What kind of entrepreneurship education model should be taken and how to carry out entrepreneurship education is an important task for colleges and universities, which needs careful study and practice. The effect of entrepreneurship education measures listed in the report remains to be verified by time. The methods of entrepreneurship education will be subject to further studied during the teaching practice of the authors in the future. The effective ways to train talents will be explored. This research aims at contributing to the development of colleges and universities and the reform of education and teaching.

References


