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Discussion on the Integration of Financial Engineering Courses and "Innovation and Entrepreneurship" Education

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Abstract

Financial engineering is a discipline with strong practicality and entrepreneurship. The integration of "innovation and entrepreneurship" education in professional education can well enhance the effect of teaching and training and enhance the competitiveness of employment. The integration of financial engineering majors and "innovation and entrepreneurship" education in application-oriented colleges and universities should build a faculty team that integrates majors and "innovation and entrepreneurship" education, strengthen School-enterprise cooperation, implement the "dual tutor" system, deepen curriculum reform, and integrate the spirit of "innovation and entrepreneurship", reform the course assessment method, establish the "innovation and entrepreneurship" ability evaluation system, and build an education system that integrates the professional and "innovation and entrepreneurship" education that meets the needs of the society.

Keywords

Financial Engineering; Innovation and Entrepreneurship Education; Integrated Development.

1. Introduction

Financial engineering is a discipline that deeply integrates the theoretical knowledge and methods of finance, information computing science, mathematics and other disciplines, and uses engineering thinking to provide quantitative solutions to solve various financial problems in economic activities through innovative financial derivatives. On October 10, 2018, "People's Daily" wrote an article "Everybody's Handwriting: Vigorously Cultivating Financial Risk Management Talents" and proposed: "The level of financial professional education in my country's colleges and universities should be improved, and a large number of high-end financial risk management with both political integrity and talent should be cultivated as soon as possible. Therefore, optimizing the curriculum system of financial engineering and improving the training level of financial engineering talents has important theoretical significance and social practical value. In the reality of the rapid development of big data analysis and financial technology, this paper aims at the multi-disciplinary characteristics of financial engineering, adapts to the current development background of innovation and entrepreneurship, and discusses how to optimize the curriculum system of financial engineering, so as to cultivate a curriculum that meets the current and future society. In-demand financial engineering professionals.

2. Research Background and Literature Review

2.1. Research Background

The Ministry of Education emphasizes that innovation and entrepreneurship education should be oriented to all students, focus on guidance, combine professional education, and integrate innovation and entrepreneurship education into the entire process of talent training. In order

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to achieve this goal, actively deepening teaching reform and exploring effective ways of education are the basis for the reform of innovation and entrepreneurship education. Drawing on the experience of MIT and other schools in the United States, Tsinghua University integrates entrepreneurship education into the teaching process, and formulates four curriculum systems of "general education + subject education + professional education + personality training", which fully integrates innovation and entrepreneurship education. Regarding what is entrepreneurship and why entrepreneurship education is needed, students should be guided to correctly understand the relationship between entrepreneurship and economic and social development, and build an entrepreneurship education infrastructure in line with national conditions.

2.2. Literature Review

In the aspect of financial engineering curriculum construction, domestic scholars have made in-depth research and exploration. Guo Junmo (2016) analyzed the current problems faced in the teaching of financial engineering courses, and proposed countermeasures such as improving the discipline construction, strengthening the construction of teaching materials and professional teachers, and focusing on cultivating students' practical application ability. Ma Qianli and Li Qian (2016) believe that teaching reform should take practical teaching as the main carrier, properly adjust course content, assessment methods and teaching methods, with the goal of continuous learning and the cultivation of innovation ability. Deng Hua, Luo Zhijun (2014) believe that taking students as the main body of teaching, encouraging active teaching, and interspersing case and experimental teaching models have achieved remarkable results in teaching practice. Yin Zhe and Li Kai (2013) pointed out that in the teaching of financial engineering, there are problems such as the lag in curriculum construction, the disconnect between theoretical research and domestic practice, and the lack of students' knowledge and skills. Change teaching methods and means, and then improve the teaching quality of courses. In terms of the integration of discipline construction and "innovation and entrepreneurship" education, Wang Yakun (2019) believes that we should pay attention to the integration research of financial engineering majors and innovation and entrepreneurship education in application-oriented universities, re-examine the deep connotation of innovation and entrepreneurship, and strive to improve the construction model of “discipline + innovation and entrepreneurship”.

3. Feasibility Analysis of the Integration of Financial Engineering Courses and "Innovation and Entrepreneurship" Education

3.1. Consistency of Educational Goals

Financial engineering is the introduction of engineering thinking into the field of finance, and the wave of innovation is more active and changeable. This requires that the current financial talents not only have the corresponding theoretical foundation, but also require us to closely integrate innovation methods, innovation and entrepreneurship theoretical research and innovation. Practice, carry forward the spirit of innovation and practice innovation ability. In addition, today's financial industry is a highly competitive and risk-filled industry. Practitioners must have good psychological quality and excellent risk tolerance in order to be competent in financial related work.

3.2. Intersection of Teaching Content

In addition to having innovative spirit and good psychological quality, financial practitioners must also be knowledgeable and versatile, familiar with banking, insurance, financial knowledge, politics, economy, etc., and have an international perspective to better adapt to financial globalization and seamless international integration. social needs. Therefore, the

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teaching content of financial engineering involves economic, political, legal, social, psychological and other aspects, and there are many overlaps and complexities with the content of innovation and entrepreneurship education.

3.3. The Similarity of Teaching Forms

In order to better meet the needs of the society for professional talents in financial engineering, application-oriented colleges and universities are also constantly reforming, and strive to make teaching work focus on improving students' practical operation ability, provide students with good practical operation opportunities, and establish on-campus training bases. , or refer students to work for internships in enterprises, so that they can enhance their practical ability in practical operations, improve their practical level, and apply what they have learned. This has a high degree of connectivity with the teaching form of innovation and entrepreneurship education. The commonality of teaching forms makes the integration of financial engineering and innovation and entrepreneurship education in application-oriented universities an inevitable development.

4. Problems Existing in the Integration Construction of Financial Engineering and "Innovation and Entrepreneurship" Education

4.1. Too Much Emphasis on Theoretical Learning, and the Concept of Innovation and Entrepreneurship is not Deeply Rooted in the Hearts of the People

With the popularization of higher education, the number of college graduates has also hit new highs over the years. In 2019, the number of graduates reached 8.34 million, a net increase of 140,000 compared with 2018. It can be seen that the employment situation of fresh graduates is quite severe. According to the statistics of the 2020 graduates of the financial engineering major of Fuzhou Institute of Foreign Studies and Foreign Studies, only 1% of the graduates are self-employed, and among the unemployed groups, most graduates are still interested in job hunting, and the number of people who plan to start a business Only 0.70%. It can be seen that the traditional concept of employment is deeply rooted, and the concept of innovation and entrepreneurship has not been deeply rooted in the hearts of the people.

4.2. Insufficient Resources and Uneven Allocation of "Professional + Entrepreneurship and Innovation" Education

In response to the State Council's call on innovation and entrepreneurship policies, major universities are working hard to implement them. However, most universities' implementation work is superficial, and students have not really participated in the innovation and entrepreneurship upsurge as masters. Many colleges and universities are not equipped with sufficient human resources and material resources for innovation and entrepreneurship. Taking the financial engineering major of Fuzhou University of Foreign Studies as an example, there are only a handful of innovation and entrepreneurship instructors. However, there are more than 100 financial engineering students, and the teachers are more than capable. insufficient. At the same time, the material resources for innovation and entrepreneurship are also in short supply. The entire School of Finance and Economics has 8 majors, but there are few institutions that guide students in activities related to innovation and entrepreneurship. Most of the students are not integrated into the atmosphere of innovation and entrepreneurship.

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4.3. The Traditional Assessment Method is Single, Which is not Conducive to Inspiring "Innovation and Entrepreneurship" Teaching

The traditional course assessment method is single, and it pays too much attention to the accumulation and memory of theoretical knowledge in books, which is not conducive to inspiring innovation and entrepreneurship teaching. Due to the lack of high-end and cutting-edge innovation and entrepreneurship teachers and equipment configuration, most colleges and universities do not know how to guide students to carry out relevant practical activities. Basically, they simply encourage students to participate in relevant innovation and entrepreneurship competitions and some innovation and entrepreneurship theme lectures. It is difficult to really learn something, learn to use.

5. Strategies for the Integration of Financial Engineering and "Innovation and Entrepreneurship" Education

5.1. Accurately Grasp the Meaning of Innovation and Entrepreneurship Education

At present, there are still many misunderstandings about the connotation of innovation and entrepreneurship education in colleges and universities. Firstly: Misreading "entrepreneurship". There is a tendency of "emphasizing entrepreneurship and ignoring innovation" in the "innovation and entrepreneurship" education in application-oriented colleges and universities. Innovation is the pursuit of spirit, entrepreneurship is the performance of behavior, and innovation is the source of entrepreneurship. Secondly: Too much emphasis on entrepreneurial success, even as the goal of innovation and entrepreneurship education. Too much emphasis is placed on the publicity and advertising of typical successful entrepreneurial cases, while ignoring the real effectiveness of innovation and entrepreneurship education. Teachers should focus on cultivating students' innovative thinking. Only by actively using innovative thinking can they be able to respond skillfully and flexibly in future work and life.

5.2. Create a Team of Teachers that Integrates Professionalism and "Innovation and Entrepreneurship" Education

Teachers are practitioners of the integrated development of "innovation and entrepreneurship" education and professional education. However, teachers in local undergraduate colleges are the shortcoming of the school's development of "innovation and entrepreneurship" education. Colleges and universities can take the following measures: 1. Select outstanding teachers to participate in academic exchanges, short-term training and study tours of "innovation and entrepreneurship" education to improve the theoretical level of innovation and entrepreneurship; 2. Select teachers to enter the enterprise for practical exercise and temporary training to improve teachers' innovative practice ability; 3. It is strongly recommended that teachers obtain qualification certificates such as innovation and entrepreneurship instructors to improve their professional level.

5.3. Strengthen School-enterprise Cooperation and Implement the "Dual Tutor" System

Colleges and universities can build a multi-party innovation and entrepreneurship platform system with the help of schools, enterprises and society, and promote the integration of financial engineering and "innovation and entrepreneurship" education. Colleges and universities should raise funds through multiple channels, set up special funds for innovation and entrepreneurship, and encourage and support college students to actively participate in innovation and entrepreneurship. Schools and enterprises can cooperate to build an innovation

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and entrepreneurship incubation platform to provide students with a real platform for trial creation. At the same time, colleges and universities can establish a dual-tutor practice teaching model based on the School-enterprise communication and coordination mechanism. One tutor in the school guides N students and establishes a tutor-centered study group. Outside the school, rotation training is implemented according to the actual job needs of the enterprise, designated by the company as an off-campus professional tutor.

5.4. Deepen Curriculum Reform and Integrate into the Spiritual Core of "Innovation and Entrepreneurship"

Supplement innovation and entrepreneurship to the syllabus of financial engineering majors, incorporate innovation and entrepreneurship courses into the teaching plan, combine innovation and entrepreneurship education with the theoretical and practical teaching of financial engineering majors, and subtly cultivate students' awareness of innovation and entrepreneurship in professional teaching, improve their enthusiasm for entrepreneurship, and build a scientific, reasonable and feasible innovation and entrepreneurship education curriculum system. In the classroom, with the help of stock simulation, fund simulation, futures simulation, bank operation and management simulation, enterprise management simulation, etc., to carry out simulated business activities and carry out indirect entrepreneurial practice learning.

5.5. Reform the Assessment Method of Courses and Establish the Ability Evaluation System of "Innovation and Entrepreneurship"

The choice of course assessment method directly affects students' enthusiasm and participation in professional courses. At present, the assessment methods of financial engineering courses of our professional are mainly written assessments, and the traditional learning method of rote memorization accounts for a large proportion, which will inevitably affect the cultivation of students' innovative thinking and the inspiration of innovative ability to a certain extent. Therefore, it is the general trend to build a diversified assessment system for this major. For example, the assessment mode of 2+2+1+5 can be adopted, namely: usual grades (20%) + course papers (20%) + practice reports (10%) + final exams (50%).

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