

Research and Practice on the Talent Training System of Financial Engineering under Innovation Driven

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ABSTRACT

With the rapid development of the era of big data, combined with the national talent power strategy, the innovative talent training program of higher education should keep pace with the times. Based on the innovative talent training program of financial engineering specialty, this paper points out the problems and opportunities existing in the cultivation of innovative talents in most colleges and universities in China under the innovation driven background, and provides corresponding policy suggestions.

KEYWORDS

innovation driven; financial engineering; cultivation of innovative talents

1 Introduction

Under the background of the innovation driven era and the "double first-class" construction of colleges and universities, cultivating top-notch innovative talents who can meet the needs of the progress of the times has become one of the core tasks of the construction of higher education institutions. Under the background of innovation driven, the development and construction of colleges and universities are facing opportunities and challenges. Innovation driven technology may provide a new perspective for the cultivation of innovative talents in colleges and universities. From the perspective of the development and construction of Application-oriented Colleges and universities, this paper studies the problems faced by the cultivation of top-notch innovative talents in financial engineering major, and explores the effective path for the implementation of the cultivation of innovative talents in financial engineering major in Colleges and Universities under the innovation driven background.^[1]

The major of financial engineering applies financial mathematics, engineering and behavioral science to financial management, and cultivates applied talents for financial product design and development, investment and risk management for financial institutions, government departments and enterprises. Finance and economics colleges shoulder the core responsibility of training high-quality finance and economics professionals for national and local economic growth. The research and training of top-notch innovative talents in national first-class undergraduate financial engineering is not only the objective demand of adapting to the changes and development of the times, but also the inevitable choice to change our current education mode and education concept^[2-3]. Under the guidance of innovation driven development strategy, the talent training of financial engineering needs to closely focus on the needs of economic transformation and development, and cultivate high-quality and top-notch financial professionals with innovation and entrepreneurship awareness and strong professional ability. Therefore, this study is an inevitable requirement for application-oriented universities to adapt to the new normal of economic development, improve the level of serving the local economy, improve the quality of personnel training, and condense the characteristics and direction of disciplines^[4-5].

2 Problems in the cultivation of innovative talents in financial engineering

Talent cultivation plays an important role in economic development. Innovative talents have become the core competitiveness of international competition and national development. China has always attached great importance to the cultivation of innovative talents. Over the years, many relevant supporting policies have been issued and corresponding results have been achieved. However, there are still some problems to be improved in other aspects.

2.1 The thinking concept of talent cultivation needs to be changed

Many domestic higher education institutions have recognized the urgency of the transformation of the teaching mode of top-notch innovative talents training, and began to actively carry out the teaching reform attempt of "integration of science and education, interdisciplinary, top-notch innovative talents training" according to their own school running characteristics. Although these attempts have achieved initial results, there are still many problems in the thinking mode of talent cultivation in some colleges and universities. The main problem lies in the lack of innovative thinking in talent

cultivation in higher education. Some higher education institutions are only limited to the written guidance of theoretical study and training plan, lack of practical action ability, and have not carried out specific teaching practice and evaluation measures^[6]. The traditional concept of talent cultivation in China emphasizes the teaching of theoretical knowledge and examination-oriented education, and the lack of cultivation of students' innovative thinking and practical ability will lead to students' lack of initiative and creativity.

2.2 Deficiencies in personnel training system

There are two main deficiencies in the personnel training system. First, from the perspective of students, there is a lack of appropriate assessment and evaluation standards. At this stage, the selection of talents mainly depends on the examination results. In such a teaching mode, the overall quality of students is relatively low, their adaptability to the future society is also poor, and their innovation ability is not strong enough. Obviously, this solidified talent training strategy cannot meet the growing demand of society for innovative talents. Second, from the perspective of educators, there are loopholes in the management measures of education and teaching. More specifically, this is mainly due to overemphasizing scientific research and quantity, while ignoring the importance of teaching quality.^[7]

2.3 Problems in talent training resource support

Although the relevant departments of the state have successively issued policy documents to encourage higher education institutions to carry out innovation and entrepreneurship education, in the actual implementation process, the supporting measures and implementation methods formulated by some colleges and universities are still not clear and perfect, and the special fund support is insufficient, which leads to some policies difficult to implement, thus affecting its substantive effect. In addition, some higher education institutions have not formulated clear innovative education and training programs for students and teachers, which leads to the ambiguity of teachers' core concepts and objectives in the cultivation of innovative talents, making them confused in the actual teaching process and making innovative education formal.

3 Opportunities and challenges of financial engineering innovative talent training based on innovation driven

China's innovation driven era started late, but its development speed is fast. The relevant leader of China clearly pointed out that "building a digital China is an important engine to promote Chinese style modernization in the digital era and a strong support to build a new national competitive advantage". Innovation driven has become the trend of the times and the necessity of history. We should accurately grasp the opportunity of innovation driven development and reasonably apply it to the cultivation of innovative talents in colleges and universities, so as to help the rapid development of the cultivation of top-notch innovative talents in China's education. Looking at the current situation of innovative talents training of financial engineering major in some colleges and universities in China in the current innovation driven era, the following opportunities and challenges are listed.

3.1 Lack of relevant cross specialty courses

The problems related to the opening of financial engineering courses are more significant, which are mainly reflected in the foundation of the curriculum and the single teaching method. The core idea of financial engineering is to closely combine finance, mathematics and information computing science, and to develop and innovate financial derivatives to solve various financial problems caused by economic instability. At present, most colleges and universities still remain at the level of theoretical knowledge teaching in the course of financial engineering, which is lack of innovation and practice. Students can only talk on paper, and it is difficult to carry out practical operation. In addition, in terms of class hour arrangement, some colleges and universities are out of proportion, and the arrangement of practical courses is less, which will lead to students' difficulty in actual learning and lack of knowledge reserve. Based on the definition of financial engineering, we can find that this is a highly interdisciplinary subject. In order to improve the core competitiveness in the course construction, we should strengthen the opening of courses such as quantitative investment analysis and C language.

3.2 Innovative talent training mode needs to be improved

In terms of talent training methods, most colleges and universities lack innovation. On the one hand, the current

cultivation of innovative talents in China does not pay enough attention to critical thinking, the ability to find and solve problems, the ability to think systematically, and the ability to innovate. With the advent of the era of big data, this has been a fact that cannot be ignored, and this era has had a profound impact on our daily work and lifestyle. As a key platform for personnel training, higher education institutions should seize the opportunities brought by the changes of the times, face various challenges, actively use big data technology, adopt innovative data analysis methods, change the traditional teaching mode, and strengthen the integration with innovation driven and other related courses, so as to lay a solid foundation for higher education institutions in the cultivation of innovative talents in financial engineering. On the other hand, based on the existing training system of financial engineering, most students play the role of passive absorption of knowledge and lack of subjective initiative. In higher education institutions, the talent training of financial engineering should focus on stimulating students' ability to actively absorb and flexibly apply knowledge for innovation, and also need to improve students' performance in innovative thinking, practical skills and team spirit. In this intelligent era, we should pay attention to active learning, research-based learning and team cooperative learning, organically integrate the curriculum content, teachers, students, teaching resources and teaching environment, and carry out open, participatory, experiential and collaborative classroom learning, so as to better achieve the goal of cultivating innovative talents in the 21st century.

3.3 Imperfect construction system of teaching staff

Under the background of innovation driven, the construction of teaching staff related to the cultivation of innovative talents in financial engineering is particularly important. The problems are mainly reflected in the lack of teacher resources and the comprehensive quality of some teachers to be improved. The major of financial engineering is a highly interdisciplinary subject integrating finance, mathematics and information technology. Its own discipline characteristics have higher requirements for teachers' own level. According to the data, compared with the major of finance, the number of students enrolled in the major of financial engineering is small, but the demand and recognition for the major in the society are increasing year by year, and more graduates will choose to work in financial institutions such as banks and securities rather than colleges and universities. At the same time, due to the high academic requirements of university teachers, there are few PhD graduates in financial engineering every year, and only a few are willing to stay in colleges and universities to teach, most of them will prefer to work in investment banks with high returns. On the other hand, for some university teachers who graduated from non-financial engineering major, they may have shortcomings in financial professional knowledge, computer programming and other aspects, and it is difficult to integrate all the knowledge.

4 The realization path of financial engineering innovative talent training based on innovation driven

In recent years, innovation driven technology is changing the face of higher education. Among them, the application of innovation driven in discipline planning is mainly reflected in the use of innovation driven analysis technology to comprehensively collect the teaching status, scientific research project data and cutting-edge development dynamic information of various disciplines, so as to further analyze the shortcomings of discipline construction, determine the future development direction of the discipline, promote the interdisciplinary and integrated development of disciplines, and create a high-level discipline with core competitiveness. How to keep pace with the times, keep innovation, and do a good job in the cultivation of innovative talents in the era of innovation driven discipline construction will be an important issue in the transformation process of higher education from "quantity" to "quality".

4.1 Strengthen the construction of relevant courses and improve the quality of courses

In the context of innovation driven era, there are many other professional courses related to the construction of financial engineering courses. We should make rational use of the advantages of innovation driven and strengthen the construction of other relevant courses. Here are two points. First, behavioral finance. The combination of innovation driven and behavioral finance will improve the status of behavioral finance in the cultivation of innovative talents in financial engineering. As a new interdisciplinary field, behavioral finance covers finance, psychology, behavior and social sciences. Its core goal is to reveal the irrational behavior patterns in the financial market. The non-structural data contained in the innovation drive is usually the key data required for the study of behavioral finance, so the future development potential of behavioral finance is very huge. Second, quantitative investment analysis. In the research and practice of innovative talents training in financial engineering, we should strengthen the proportion of quantitative investment analysis. Quantitative analysis is a tool that uses all kinds of data, computer technology and mathematical models to scientifically and reasonably select investment objectives or portfolios that match "risk and return". In the context of innovation driven, the research field of quantitative investment has become more extensive, and its research

focus is more on the "relevance" between things than the "causal link". In the context of innovation driven, case analysis can be used to emphasize the importance of quantitative analysis in the investment industry. At the same time, we can also build an online course system, online and offline integrated teaching, build a digital resource library, strive to improve the quality of financial engineering course construction under the innovation driven background, explore a variety of effective course organization forms and improve the construction methods of financial engineering courses under the innovation driven background, and improve the teaching quality.

4.2 Explore new talent training mode and improve talent quality

With the advent of the innovation driven era, human social productivity continues to improve, science and technology continue to innovate, and data has become an important factor of production to promote social and economic development. In this context, the growing demand for top-notch innovative talents has brought unprecedented challenges to higher education. However, the current talent training mode and training program of colleges and universities in China do not fully meet the needs of the innovation driven era. Based on this, on the one hand, we found that we should strengthen and improve the innovative talent training mode of higher education, for example, develop a new mode of innovative talent training based on the integration of production and education. By implementing the talent training strategy of the integration of production and education, and using innovation driven to enhance the ability of the integration of production and education, higher education institutions can not only build an academic practice environment that meets the needs of social progress, but also provide the society with financial engineering professionals that keep pace with the times, so as to achieve the effect of resource sharing and win-win. On the other hand, colleges and universities should reasonably use the innovation drive to establish a student information database, so as to better understand the learning situation of students, improve the efficiency and quality of teaching management, and urge students to seriously participate in the learning of courses related to the cultivation of financial engineering talents driven by innovation.

4.3 Strengthen the construction of teaching staff and improve teaching quality

In the cultivation of top-notch innovative talents, the importance of teacher resources is self-evident. In order to improve the cultivation system of innovative talents in the era of innovation driven, improve the teaching quality and strengthen the construction of teaching staff is imminent. First, strengthen the construction of financial engineering education resources. On the one hand, it can speed up the pace of cultivating top-notch innovative talents in financial engineering, on the other hand, it can provide a source of talents for the reserve of teachers in colleges and universities. Second, strengthen the academic exchange of the existing teaching staff. For schools, they should establish an effective teaching evaluation system and incentive mechanism, regularly carry out academic research activities, and improve the comprehensive quality of the existing teaching staff. Third, actively carry out foreign exchanges and cooperation. The financial industry is a highly globalized industry. For education, it should also adhere to the principle of "openness", enhance teachers' international vision, and attract foreign excellent teacher resources to invest in domestic education construction.

4.4 Pay attention to the combination of teaching and scientific research, and innovate teaching ideas

Scientific research can not only promote knowledge updating and enrich curriculum content, but also is the key way to improve the training level of top-notch innovative talents. Take advantage of the high academic level of the team and the hardware advantages of the innovation driven era to guide students to participate in scientific research, develop good research habits, and make correct guidance and preparation for the development of students after graduation. At the same time, in teaching, heuristic, progressive, discussion and other teaching methods are used to improve students' interest in learning, and a set of teaching mode for top-notch innovative talents of financial engineering specialty with unique characteristics of Financial Colleges and universities is explored, which combines teaching and practice.

5 Conclusion

In theory, the research on the cultivation of innovative talents in financial engineering under the background of innovation driven not only meets the needs of deepening the theoretical research of higher education, but also helps to have a deeper understanding and deepen the research in the era of innovation driven; In practice, the cultivation of financial engineering talents in colleges and universities focuses on cultivating students' ability to actively acquire knowledge, flexibly use knowledge to create, and improve students' innovation consciousness, practical ability and team

spirit. We should firmly grasp the development opportunity of the innovation driven era, combine innovation driven technology with education and innovative talent training, provide more efficient and accurate services for the cultivation of top-notch innovative talents, and promote high-quality development.

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