Analysis of Construction Strategies for Financial Engineering Majors in Applied Universities under the Background of Industry Education Integration

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Abstract: The integration of industry and education refers to the deep cooperation between industry and education, which is an important means for the construction and talent cultivation of financial engineering majors in applied universities. It is also the key to bridging the gap between universities and enterprises and promoting mutually beneficial development.In the new era of education and teaching reform, this article will focus on the integration of industry and education. Firstly, it briefly explains the practical mode of industry education integration. Then, taking the financial engineering major as an example, it deeply explores effective strategies for professional construction under the background of industry education integration, in order to provide a new perspective and ideas for the construction of the financial engineering major, and help cultivate and develop excellent financial engineering talents.

Keywords: Integration of industry and education;Applied universities;Financial Engineering major;Construction strategy

Introduction

The integration of industry and education has become an important proposition in the reform of talent cultivation models in applied universities in the new era. It is a major trend in the future adjustment of higher education structure and a necessary path for applied undergraduate universities to transform from scale expansion to connotation development.In recent years, financial engineering, as an emerging major in many universities, has been committed to cultivating composite elite talents capable of competent professional work in financial institutions and government enterprises and institutions for the country and society.Research has shown that focusing on the integration of industry and education in the construction of financial engineering majors in universities can further improve the effectiveness of professional construction. At the same time, with the joint efforts of both schools and enterprises, it is conducive to cultivating more outstanding talents that can be retained and used by enterprises, which should attract widespread attention from people from all walks of life.

1. Research on the Practice Model of Industry Education Integration

1.1 School enterprise cooperative education model

The implementation of the school enterprise cooperative education model is an important and complex project aimed at shortening the distance between higher education and market demand, promoting the sharing of excellent resources between schools and enterprises, and adhering to the principle of mutual benefit to cultivate high-quality talents.On the one hand, the implementation of the school enterprise cooperative education model should follow established goals and principles, ensuring resource sharing, risk sharing, and benefit sharing. Only in this way can the cooperation between schools and enterprises continue in a stable and orderly manner.To this end, schools and enterprises can collaborate to establish cooperative institutions or committees and develop scientific and reasonable cooperation mechanisms, establish a sound management system, to ensure information transparency and smooth communication channels between schools and enterprises.On the other hand, the implementation of the school enterprise cooperative education model should further clarify the content and methods of cooperation.Regarding the cooperation content, it mainly involves curriculum design, practical teaching, and teacher training.In terms of curriculum design, both schools and enterprises should design a curriculum system based on the actual needs of the enterprise and the forefront trends of professional development, and continuously optimize the curriculum content from the perspective of social and student needs;For practical teaching, the most prominent advantage of enterprises is that they can provide students with a real work environment, and by guiding students to fully participate in carefully designed projects by both schools and enterprises, improve their practical abilities;In terms of teacher training, schools and enterprises should jointly carry out teacher training and training courses to help teachers accumulate rich practical experience and meet the needs of school enterprise cooperation in education.

1.2 Construction and utilization of practical bases

The construction and utilization of practical bases aim to meet the various needs of financial engineering practical teaching in terms of venue and conditions, and help guide students to put theory into practice in a timely manner. It is an important component of the integrated practice model of industry and education.The construction of a practical base is a systematic and complex project, involving multiple stages such as site selection, planning, design, and construction. Each stage requires careful consideration and scientific decision-making.Firstly, in terms of site selection, the key is to ensure that the practice base meets the needs of teaching and learning, and expand its coverage.It is suggested that the geographical location of the practice base should be as close as possible to the school, ensuring convenient transportation and abundant resources. This will facilitate the implementation of diverse educational and teaching activities, and provide more convenience for school enterprise and school community cooperation;Secondly, in terms of planning the practical base, it should

closely align with teaching needs, combine professional characteristics, scientifically and reasonably divide the functional areas of the base, such as laboratories, training venues, simulated work scenarios, etc., to ensure that students are provided with a multi-dimensional learning and exercise platform;The design of the practice base should closely align with the development needs of the industry and determine the configuration, layout, and quantity of facilities and equipment in combination with teaching objectives, in order to ensure that the built base keeps up with the pace of the industry and meets the needs of the future employment market;Finally, the construction of the practice base should be carried out in an orderly manner according to the planning and design, ensuring that the facilities in each functional area are complete and the equipment is advanced, providing stable support for the steady and orderly implementation of the teaching plan.

The role and function of practical bases are mainly reflected in the process of education and teaching.Schools should develop scientific and detailed practical teaching plans based on actual situations, set corresponding teaching objectives for each stage, collect and organize teaching content, and ensure that students can receive sufficient practical training in all aspects.Teachers play the roles of guides, tutors, and collaborators in this process.Teachers should carefully design rich and colorful practical activities for students according to the teaching plan and encourage their active participation. The key is to guide students to flexibly apply their learned knowledge to solve practical problems, aiming to cultivate their independent problem-solving and practical abilities.In addition, schools should actively invite outstanding personnel from enterprises to enter the practice base, deliver cutting-edge industry knowledge to students through lectures, face-to-face guidance, and other forms, deepen school enterprise cooperation and integration of industry and education, aiming to fundamentally enhance the professional competitiveness and employment ability of college students, and safeguard their comprehensive development.

2. Effective Strategies for the Construction of Financial Engineering Majors in Applied Universities under the Background of Industry Education Integration

2.1 Establish a communication platform between interdisciplinary teachers, universities, and enterprises

In the context of the increasingly prevalent interdisciplinary education and teaching philosophy, universities should rely on the integration of industry and education to strive to create a multidisciplinary teacher communication platform that integrates multidisciplinary teachers. The aim is to build a curriculum system that is both theoretical depth and practical application. At the same time, knowledge content, proportion, teaching difficulty, assessment methods and other contents should be redefined, key and difficult knowledge content should be determined, the knowledge context of financial engineering courses should be clearly sorted out, and the close connection between professional courses and other subject knowledge should be accurately positioned. Only in this way can the effective integration of interdisciplinary knowledge content be truly achieved, laying a good foundation for creating excellent course groups.Specifically, in addition to experts and teachers from different disciplines, the platform should also introduce experienced enterprise experts and industry teachers. This helps to ensure that the design of teaching content is closely aligned with the job requirements. More importantly, enterprise experts and industry teachers will effectively assist university financial engineering teachers in deconstructing corresponding knowledge and structures according to the specific job requirements. Based on this, combined with the existing educational resources of the school, the platform should deeply analyze the cognitive patterns of students, clarify the needs of applied university talent cultivation, and integrate course content among multi-disciplinary teachers, ultimately achieving the educational goal of “ability first, knowledge sufficient”.In order to achieve this goal, applied universities should establish and improve incentive mechanisms for faculty and staff, including but not limited to professional title evaluation, reward systems, salary incentives, etc.Specifically, for those teachers who have made outstanding contributions in the field of financial engineering education, universities should give corresponding rewards and issue honorary certificates to teachers, in order to continuously motivate them to actively participate in the construction of the financial engineering profession.On the other hand, universities should also establish a teaching competition system to encourage teachers to actively participate in various teaching competitions organized by schools or local governments, promote teaching and learning through competitions, and strengthen the professional knowledge and skills foundation of teachers, in order to provide students with better educational services.

2.2 Fully utilize enterprise resources to achieve teaching method reform and innovation

The traditional teaching model is based on one-way teaching by teachers and individual self-learning by students.However, in the face of the current ability oriented and practice driven talent cultivation model reform, teachers must reform their teaching methods from a workplace perspective. In this process, they must fully leverage the unique resource advantages of cooperative enterprises, effectively introduce students into a learning environment that is closer to the real business process, and improve the quality of their learning.Firstly, actively utilize enterprise resources, optimize course content, and make it closely aligned with the actual job requirements.As is well known, enterprise experts have a solid professional foundation and rich practical experience. Introducing them to campus as mentors for practical courses helps students to be exposed to the latest financial strategies and advanced technologies within the school, thereby providing strong support for students to smoothly enter the workplace in the future.At the same time, schools and enterprises should also collaborate to carefully design diverse financial practice projects for students, driven by projects, fully mobilizing their enthusiasm and initiative to participate in and experience specific business processes in the financial industry, so that the course content closely aligns with technological development and industry needs.Secondly, simulate the operations of securities exchanges, futures exchanges, securities companies, futures companies, and other companies, conduct scenario based comprehensive simulation training, fully leverage the role of practical bases, and create a realistic working environment for students in enterprises.The school enterprise alliance designs a variety of practical teaching activities for students, encouraging them to play different job roles and adjusting teaching plans in a timely manner based on their actual

performance in completing tasks, to help students develop comprehensively.

2.3 Continuously optimizing the construction of course clusters around “student-centered, results oriented” approach

Firstly, establish industry alliances and encourage enterprises to participate in the entire process of financial engineering professional construction in the form of a “community with a shared future”.The first step is for schools to reach an agreement with enterprises, select participating enterprises, and establish a database of enterprises;The second step is for enterprises to settle in “industrial parks” or jointly build enterprise studios with schools and enterprises, form a community with a shared future, sign a framework agreement for collaborative education between schools and enterprises, and clearly define the rights and obligations of enterprises and universities.Enterprises actively participate in practical teaching activities such as developing course groups, graduation internships, and developing course plans.In addition, industry alliances should regularly hold seminars on talent cultivation in the financial engineering industry. Schools and enterprises should carefully investigate and analyze industry trends and talent demand, summarize and reflect on the teaching situation of the financial engineering major, especially pay attention to the construction and utilization of practical teaching bases, and assist in the construction of the financial engineering major and course group optimization through continuous optimization and innovation.

Secondly, establish a multi-level financial practice course system.On the one hand, in order to cultivate and improve students’ computer and financial practice literacy, universities should closely follow the needs of Chinese financial practice and students, and gradually arrange computer courses for students.The teaching content of computer courses should not be limited to traditional basic computer knowledge, but should closely integrate programming, databases, modeling and other knowledge with practical courses in the field of financial engineering. Only in this way can students be encouraged to flexibly use computer skills to solve the many difficulties faced by the development of the financial engineering industry, which is also a key measure to improve their interdisciplinary abilities.On the other hand, constructing a curriculum content and textbook system that matches the practical needs of financial engineering from both micro financial engineering and macro financial engineering perspectives.At the macro level, incorporating courses such as industrial financial engineering and county-level financial engineering into the professional curriculum system aims to solve financial problems faced by the country or departments and improve the efficiency of financial resource utilization;At the micro level, design progressive courses such as “Frontiers of Financial Practice”, “Innovative Art of Financial Engineering”, “Financial Innovation Thinking”, “Futures and Derivatives Practice”, and “Financial Competition Course”, aiming to cultivate students’ awareness of financial practice and enhance their corresponding financial practice abilities.Universities should actively introduce industry resources, jointly develop school-based textbooks with enterprises, and build a case library for financial engineering majors, so as to make the professional teaching content more in line with the latest developments in the industry.

Epilogue

In summary, the construction of financial engineering majors in application-oriented universities should closely align with industrial development and social needs, actively reform and innovate education and teaching models, take the concept of industry education integration as the main line, and build professional talent training models that meet the needs of industry development. Only in this way can more high-quality financial engineering professionals with both innovative and practical abilities be cultivated, and contribute to the development of China’s financial industry.

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