Research on Talent Training Mode of Computer Undergraduate Major in Finance and Economics Colleges

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Abstract: - The construction of computer undergraduate major is the foundation and core of improving the ability of talent cultivation, which plays an important role in cultivating the quality of college talents. Different from the computer undergraduate major under the background of new engineering, this paper aims at exploring and practicing the construction of computer undergraduate major in finance and economics colleges. Construction on the related of artificial intelligence, big data, cloud computing, and blockchain as the computer basic courses, such as the combination of business-related courses, to explore the theory and application of technology as the core in combination with the new way of teaching reform, fully develop the students' ability of practice and innovation, cultivating innovative and interdisciplinary talents of the new era.

Key-Words: - Talent Training Mode, Computer Undergraduate Major, Finance and Economics Colleges.

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1 Introduction

In recent years, computer major has become a popular major in universities around the world. With the rapid development of new technologies such as artificial intelligence, cloud computing, big data, and mobile Internet, the demand for talents majoring in computer science is also gradually increasing. Especially, Comprehensive and compound talents with multi-disciplinary backgrounds have become the preferred conditions for employment in Finance and Economics Colleges [1]. Therefore, training of computer science and technology undergraduates in the universities pays more attention to practical teaching, especially for the university of finance and economics. Because students can make better use of computers to solve their professional knowledge [2].

Computer science and technology discipline is the study of computer design, manufacturing, the use of computer information acquisition, expression, storage, processing, control and other theories, principles, methods, and techniques of the discipline, it includes science and technology two aspects, science and technology complement each other, interaction [3]. In the aspect of science, it emphasizes the mathematical theoretical foundation of the discipline and the guiding role of mathematical thought in computer science. The technical aspect focuses on the engineering and application of this discipline, which is the power, source, and end result of the development of computer science and technology [4]. There is a great difference between the construction of a computer specialty under an engineering background and that in finance and economics colleges. The former strengthens mathematical knowledge and discipline basic theory, and mainly cultivates research-oriented, innovative, and compound talents with comprehensive abilities in computer theory, computer system, computer software development, computer engineering and application technology, information system development, and application research, analysis and design. The latter is mainly for the undergraduate computer majors of finance and economics colleges and cultivates comprehensive, innovative, and compound senior professional talents in the financial industry.

Therefore, training the special talents of computer undergraduate major is a very important factor in Finance and Economics Colleges. The first

thing is to master the basic theory, technology, and method of computer science and technology. Moreover, they should master some basic theoretical knowledge of economic management, so as to meet the needs of social development in the new era.

2 Construction of Computer Major in Finance and Economics Colleges

The computer major relies on the advantages of economics and management disciplines, combines the relevant theoretical knowledge and practical skills of economics and management, focuses on mastering the relevant theoretical knowledge of economics and management information management software development, highlights the advantages of cross-disciplines, and enhances the cultivation of students' practical ability. It mainly discusses the construction of computer specialty, the development of case teaching model, and the construction of practice and training base.

On the basis of the traditional computer major, combined with the advantage of the discipline, the construction of innovative and compound talents to meet the needs of society is the goal of the curriculum system. Develop specialized training scheme and course standard, teaching outline, and improve the relevant policies of the undergraduate teaching, standard teaching management system, perfect the theory teaching, practice teaching, graduation design (paper), test, selection of textbooks, and other teaching activities each link quality standards, to achieve complete undergraduate course teaching and compound talent training target. Training the non-computer students to make use of the tool of computer technology in their major, which plays an important role and position in the curriculum system and major construction of economics and management, such as Python Language. The Python Language [5] is a large number of third-party modules based on Python that support everything from financial analysis to biological information, from social network analysis to natural language processing, from various databases to high-performance computing model. It is an interpretive, object-oriented computer programming language tool for data statistics, analysis, visual analysis and other tasks, as well as machine learning, artificial intelligence and other fields. The language can meet all the functional requirements of data processing, statistical model and graph drawing required by data mining.

Therefore, computer major can be used in many areas, such as Machine learning and its application, pattern recognition, neural network and deep learning, visualization technology and other courses are offered in traditional basic computer courses. Specially, it related courses of economics and management are also offered for undergraduates majoring in finance and economics. Such as business Big Data Analysis, financial data analysis, and practice, finance, Management principles and management marketing, management operations research, as well as national college students' innovation and entrepreneurship practice courses [6]. Learning the basic knowledge of Python, such as building the Python development environment, Python syntax structure, program flow control, common data types, and custom functions. By learning the basic principles of programming, students can not only master theoretical knowledge, but also grasp the hot issues of The Times, such as the current COVID-19 epidemic, master python's approach to big data processing, and develop the basic skills of big data analysis [7-9]. Combining theory with practice, through a large number of examples, such as Python-based data visualization analysis under the global COVID-19 situation, analysis and prediction of stock fluctuations, loss and profit analysis and prediction of listed companies, real estate price fluctuations and other practical problems. Formulate the teaching syllabus and design the teaching plan reasonably. Through the reasonable design of teaching programs, such as the design of the introduction part, students can have a general understanding of the theoretical knowledge points, and then carry out reasonable guidance, so that students have a strong interest in the knowledge, fully mobilize their enthusiasm of students, and give play to the initiative of students' independent learning.

3 Reform Measures

Computer science curriculum system was established, with reference to the national standards for the class teaching of undergraduate courses of common colleges and universities ", including computer professional foundation courses, courses in machine learning and pattern recognition, artificial intelligence course, big data analytics, cloud computing technology course, intelligent algorithms classes and business intelligence system classes, etc. Cultivate students' abilities in data collection, data mining and data analysis, expert recommendation system, image and voice processing, financial big data analysis and intelligent business system development, etc [10]. With intelligent algorithm design and financial big data analysis as the major development direction. Moreover, the major has set up a three-level practice and training system, including course practice, comprehensive professional practice and school-enterprise joint training. Relying on school-enterprise cooperation, students are trained at different stages to enhance their practical ability.

Around the goal of talent training mode of computer undergraduate major and training characteristics [11], this major reform in specialized courses as foothold, professional evaluation index system for reference to national characteristics. The professional reform and the professional construction of the high starting point, and note the teaching content combined with the reform of teaching methods pay attention to professional course construction and teaching team construction supplement each other. Additionally, pay attention to the construction of practical teaching and teaching management system, promote the improvement of the level of the computer major in the finance and economic universities, and strive to reach the advanced level of similar majors in domestic universities. The main measures taken include the following aspects.

(1) Constantly optimize the curriculum system. The curriculum system pays more attention to the scientific nature, advanced nature and applicability of knowledge, actively introduces the latest scientific and technological achievements in this field into the curriculum teaching, and updates and improves the curriculum teaching content. To talent training scheme has the mutual influence and is orderly, interactive, can form an independent complete system of the teaching content of related courses integrated together to constitute the curriculum group, through the course of integration of teaching content, planning and curriculum development direction and the construction of the new curriculum, to cultivate the student's ability of various completely dissolve into curriculum group. For example, the core courses are included in the following curriculum:

Mathematical analysis, advanced algebra, analytic geometry, probability statistics, mathematical model, discrete mathematics, fuzzy mathematics, fintech, real variable function, complex variable function, differential equation, physics, information processing, information coding and information security, modern cryptography course, computational intelligence, Fundamentals of computer science, numerical calculation method, data mining, optimization theory, operations research, computer composition principle, computer network, computer graphics C / C + + language, Python language, Java language, assembly language, algorithm and data structure, database application technology, software system, operating system, etc.

(2) Constantly explore the reform of teaching methods to promote the improvement of teaching quality. We should actively promote the way of computational thinking concept, and train students' ability to think, analyze and solve problems independently in a problem or task-driven way. Computational thinking is a series of thinking activities covering the breadth of computer science, such as problem solving, system design and human behavior understanding [12-14]. In the teaching process, students' subjective initiative should be actively brought into play to improve the quality of course construction in various ways.

(3) Construction of high-quality teaching resources. Promote teachers to actively compile high-level textbooks, and encourage the application of high-quality textbooks at provincial or ministerial level. Actively cultivate and promote the construction of university-level excellent courses, provincial excellent courses and national excellent courses, actively promote the construction of "bilingual demonstration courses" and multi-dimensional teaching resources, drive the construction of professional courses through the construction of excellent resources, and provide a solid foundation for talent training. Teaching system construction and teaching quality assurance. Revise and perfect the existing teaching management rules and regulations and teaching documents, so that the teaching process can be regulated; Strengthen the construction of teaching style, learning style and examination style, and strengthen the teaching inspection system; Make full use of information technology to standardize and modernize teaching management; Improve the teaching quality monitoring and evaluation system, and form a multi-dimensional quality monitoring and guarantee system with full participation.

(4) Experimental and practical teaching construction. Promote the establishment of a diversified training system of students' practical ability, in addition to strengthening the training of students' practical ability in the curriculum training system, encourage to participate in various practical and innovative activities, improve the comprehensive quality of students; Actively deepen the construction of professional laboratories. According to the needs of professional construction, constantly build or perfect professional laboratories; Vigorously expand the construction of practice bases, increase off-campus practice and training bases, and explore cooperation mechanisms conducive to cultivating students' practical ability.

4 Training Program

Computer major adheres to the principle of moral education and all-round development of morality, intelligence, physical education, beauty and labor [15]. It has a good command of computer programming languages, such as Python, Matlab and R languages, and understands and applies new financial instruments, trading means and financial risk management techniques. Cultivate students with solid foundation, high quality and strong ability. Skillfully use modern information technology, master the basic theories of computer science and technology-related, engineering knowledge and methods of computer system design, deployment, application and management ability, to master the certain basic knowledge of economics and management, in government departments, institutions, not related technology development companies and other units engaged in artificial intelligence, big data technology, mobile development, Internet of Things engineering application and management and other related work, Additionally, training students with strong ability and high quality to meet the needs of economic and social development of the new era of high-level application-oriented professionals.

The most of Finance and Economics Universities, fully relying on the advantage of school subjects of administration, pay attention to the artificial intelligence, electronic information engineering, financial engineering, and related management knowledge and skills of the economy, highlight the discipline overlapping, emphasis on "new management" strategy of computer application system development and management of the relevant theoretical knowledge and skills, strengthen the cultivation of the students' practice ability. Universities should have the following abilities:

(1) Have engineering and technical knowledge of analysis, design, development, operation and management related to computer science, master knowledge of natural science, mathematics, artificial intelligence, big data and management related to the major, and have the ability to apply the knowledge to computer-related industries. Have solid basic knowledge of natural science, mathematics, artificial intelligence, big data technology, cloud computing technology, blockchain technology and mobile Internet of Things technology, as well as the basic knowledge of economic management, good command of

English knowledge, good ability to read, understand and write foreign language materials; Ability to use technical language to communicate and express in cross-cultural environment, and teamwork skills.

(2) Master the basic principles, methods and knowledge of key technologies related to basic computer science, understand the frontier and development trend of computer science, and the ability to organize and manage large information management systems in related professional fields. Explore the engineering practice of relevant enterprises in the computer science industry, understand the emerging technology and demand of planning and design, operation management and control in this field, and have the ability to analyze and solve practical engineering application problems in the field of computer science by comprehensively using multidisciplinary knowledge, technology and tools. Master relevant development and mobile development technology of the embedded operating system, be skilled in embedded development based on the embedded operating system, APP development, and mobile client program development, and have strong system comprehensive ability.

(3) Deepen the cultivation of talents in the field of the compound and applied fintech by combining the superior resources of the university, relying on discipline competitions such as "Internet +" and national and provincial laboratories. With the support of computer science and technology and the foundation of economics and management, the school attaches great importance to the connection with the practice department of fintech and cultivates students' knowledge application ability in the field of finance. Thus, build a quality assurance system is a very important standard. Set up the scientific education quality, transformation construction idea, change the quality evaluation mechanism, to develop education development goals and the talent training standards, combined with computer science and technology to establish and perfect the institutionalization and standardization of education quality assurance.

Additionally, strengthen the legal construction of education quality assurance, the authority, and responsibility of evaluation subjects, the qualification of education evaluation institutions and evaluation experts, and guide the accurate positioning and scientific development of colleges and universities. At the same time, according to the contact and cooperation with other colleges and universities, the establishment of a relevant quality assurance work system, management system, and responsibility system, deepen the understanding of college teachers and students on the quality of education, consciously maintain the quality of the reputation of the school, and make contributions to the quality of school education and teaching.

5 Conclusion

This paper shows the exploration and practice of computer major construction under the background of finance and economic universities. Talent training mode of computer undergraduate major aster the basic theories, techniques and methods related to computer science and technology, and have the ability of systematic analysis and application. Moreover, they should master some basic theoretical knowledge of economic management, so as to meet the needs of social development in the new era.

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