

Exploration and Practice of the Training System for Applied Talents in Economics and Management under the Background of New Liberal Arts

Abstract: The article introduces the background, connotation, and construction significance of the new liberal arts in the development process of higher education in China. Taking the economics and management major of Shandong Jiaotong University as an example, it introduces the research and practice carried out in the construction of the new liberal arts in economics and management majors from five aspects: professional optimization, course improvement, model innovation, teacher improvement, and quality assurance, focusing on the construction of a digital and intelligent applied talent training system. **This article provides reference for the cultivation of economic and management talents under the background of the new liberal arts.**

Keywords: New Liberal Arts, Economics and Management Major, Applied Talent Training System

1. Introduction

The "New Liberal Arts" is a new concept proposed by Chinese higher education in response to the impact of new technologies such as artificial intelligence, blockchain, big data, cloud computing and 5G, and in response to the new demands of various sectors of society for higher education. It is called the "Four New" major together with the new engineering, new agriculture, and new medicine. This concept was first proposed during the 2018 National Education Conference and officially implemented at the "Six Excellence and One Top" Plan 2.0 launch conference in 2019. In November 2020, the National Conference on New Liberal Arts issued the "Declaration on the Construction of New Liberal Arts", which pointed out that the construction of new liberal arts is of great significance in promoting innovative development of liberal arts education, building a new pattern of philosophy and social science development centered on education, accelerating the cultivation of liberal arts talents in the new era, and enhancing the country's cultural soft power. In February 2021, the Higher Education Department of the Ministry of Education clearly included the construction of new liberal arts majors in the key work points for the current year. In July 2022, the "New Liberal Arts Construction Summit Forum 2022" was successfully held, promoting the further deepening and implementation of new liberal arts construction.

2. New Liberal Arts Connotation

Liberal arts is a collective term for humanities and social sciences. According to the latest disciplinary classification catalog in China, among the existing 14 disciplinary categories, except for science, engineering, agriculture, medicine, military, and interdisciplinary subjects, all others belong to the liberal arts, covering 8 disciplinary categories such as philosophy, economics, law, education, literature, history, management, and art. From this, it can be seen that the scope of liberal arts is very broad. Not only that, the number of students in liberal arts is also very large. According to statistics, the number of majors, the number of professional distribution points, and students in liberal arts accounts for more than half of the total number in universities. Liberal arts education is not only related to the development of humanities itself, but also provides direction, standards, value judgments, and comprehensive qualities for the construction of

disciplines such as science, engineering, agriculture, and medicine. In this sense, the quality of liberal arts education determines the overall situation of higher education.

So what is New Liberal Arts? In November 2020, Vice Minister Wu Yan clearly pointed out at the National Conference on the Construction of New Liberal Arts that the new liberal arts is the innovative development of liberal arts education, and it is necessary to cultivate new era liberal arts talents who know China, love China, and are worthy of the task of national rejuvenation. The innovation of new liberal arts is mainly reflected in two aspects: firstly, breaking down professional barriers and promoting interdisciplinary integration; The second is to innovate training methods and promote the cultivation of new liberal arts talents with new concepts and models. The characteristics of the new liberal arts include two dimensions, one is to strengthen value leadership, and the other is to encourage integrity and innovation. The fundamental task of the construction of the new liberal arts is to cultivate talents with confidence, pride, and autonomy, as well as to cultivate inheritors of Chinese civilization, promoters of Chinese culture, disseminators of Chinese voice, innovators of Chinese theory, practitioners of Chinese path and pioneers of China's future.

Why should we carry out the construction of new liberal arts? In the "Declaration on the Construction of New Liberal Arts", Fan Liming, director of the National Center for the Study of New Liberal Arts, clarified the importance and urgency of the construction of new liberal arts from five aspects: enhancing comprehensive national strength, strengthening cultural confidence, cultivating new talents of the times, building a strong country in higher education, and integrating the development of liberal arts education. In addition, from the perspective of enrollment, in recent years, many traditional liberal arts majors have experienced a decline in enrollment promotion lines. Many 985 and 211 universities have encountered a cold wave in enrollment, and popular majors in economics and management, such as finance, have also experienced inflection points due to the impact of the global economic downturn. From the perspective of employment, on the one hand, the large number of liberal arts students has caused serious job competition; On the other hand, a new round of technological and industrial revolutions has given birth to new formats and models, creating a new demand for management and other humanities talents; But the talents we cultivate do not match these needs seriously. From the perspective of educational objects, we are facing the world's largest group of only children and the largest group of netizens. Students' values, ways of thinking, learning, and communication have undergone significant changes compared to before, requiring us to make adjustments and changes.

As an important component of liberal arts majors, economics and management majors rank first in both the number of major locations and the number of students on campus. They should bear the heavy responsibility of building new liberal arts majors. Especially in the new generation of information technology revolution and industrial transformation wave, with the digital upgrading and intelligent leap in various fields of economy and society, the existing economic management theory, knowledge architecture, and research paradigm urgently need to be innovated and reshaped. Traditional economic management education characterized by discipline, specialization, and refinement faces severe challenges and new opportunities. How to closely align with the overall deployment requirements of the national new humanities construction, and continuously optimize the talent cultivation mode and quality with the help of new technologies, has become an important proposition for the cultivation of management talents in the new era.

3.Exploration and Practice of New Liberal Arts Construction in Economics and Management Majors: Taking Economics and Management Majors in Shandong Jiaotong University as an Example

Shandong Jiaotong University is a full-time undergraduate university with the characteristic of cultivating comprehensive transportation talents, covering 7 disciplines such as "engineering, management, science, economics, humanities, arts, and law". The school adheres to the fundamental task of cultivating morality and talents, with promoting the comprehensive development of students as the center, and encourages all colleges to carry out the construction of the "four new" majors. The School of Economics and Management actively responded to the university's call, conducted beneficial explorations and practices around the construction of new liberal arts majors in economics and management.

The School of Economics and Management is currently recruiting 6 undergraduate majors. Since the National Conference on the Construction of New Liberal Arts, the leaders of the school have organized and studied the opinions and plans on the construction, optimization, and adjustment of the "Four New" majors issued by the Ministry of Education, , clarifying the ideas for the construction of new liberal arts , namely: guided by value, empowered by digital intelligence, cross integration, diverse collaboration The concept of "characteristic development" is the construction of new liberal arts. Through professional optimization, curriculum improvement, model innovation, teacher improvement, and quality assurance, we break the boundaries of disciplines, achieve disciplinary integration, and cultivate composite, innovative, and applied new management talents that meet the requirements of the new era.

3.1 Promote optimization of specialty

Specialty is the basic platform for talent cultivation. Specialty optimization should not only follow the small logic of the development of economic and management majors themselves, but also obey and serve the big logic of national and regional economic development strategies. We adhere to a prominent problem oriented approach in specialty optimization, focusing on solving the problem of inaccurate matching between the supply side of talent cultivation and the demand side of economic and social development, and improving the specialty structure. Strengthen the development of professional transportation characteristics by addressing the issues of lack of distinctive disciplinary and professional characteristics and insufficient cross integration. To address the issue of weakness of new technological abilities and low literacy among graduates in the field of economics and management, we need to restructure the talent training system and improve students' technological application abilities.

In order to implement the strategy of building a strong transportation country and a digital China, we displaced the major of Exhibition Economy and Management with the major of Digital Economy in 2022. We plan to displace the Marketing major with the Big Data Management and Application major in 2023. At the same time, traditional majors will be integrated with new technologies represented by big data and artificial intelligence. Finance will be upgraded to Financial Technology, Financial Management and Auditing will be upgraded to Intelligent Engineering Financial Management and Intelligent Engineering Auditing, and Human Resource Management will be upgraded to Big Data Human Resource Management. After adjustment, the number of economic disciplines has increased to two, namely finance and digital economy; Big data management and application belong to the discipline of management science and engineering, helping to achieve the goal of renaming the university.

In terms of characteristics, based on the transportation advantages of the university, focusing on the construction of a strong transportation country and a strong transportation province, the Finance major strengthens the characteristics of the "transportation investment and financing", while the Financial Management and Auditing majors focus on creating the characteristics of the "Engineering Financial Management" and "Engineering Auditing". Human Resource Management and Digital Economy respectively add Transportation Human Resource Management and Digital Transportation directions, The major of Big Data Management and Application focuses on the Transportation Management and Application of Big Data, forming distinctive disciplinary characteristics and educational advantages.

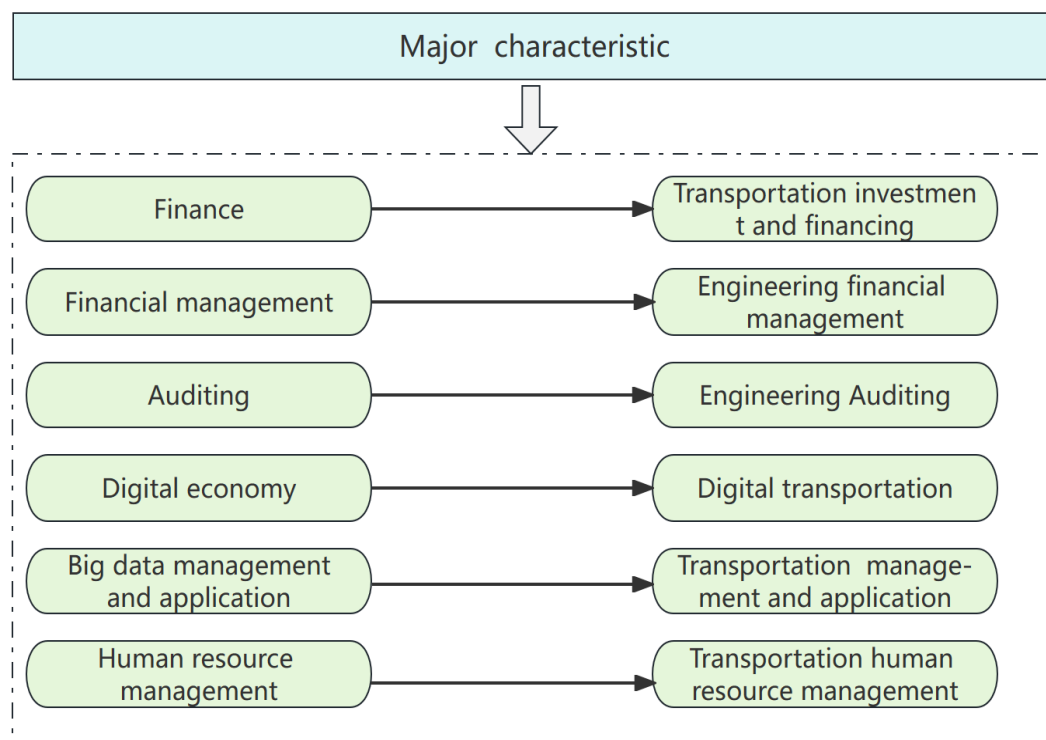


Figure 1 Major characteristic

Taking advantage of the opportunity to revise the 2023 talent training plan of the university, we conducted research on over 20 enterprises, 30 universities, and hundreds of graduates. Based on feedback, after repeated argumentation and multiple rounds of revisions, a new version of the talent training plan has been formed.

The prominent change in the revised talent training plan is that the professional positioning and training objectives are clearer, reflecting interdisciplinary integration and responding to new technological requirements. It not only depicts the core competencies of the profession, but also takes into account the future career development trends and growth directions of students. For example, the Financial Management major has included in its professional positioning the concept of "actively adapting to the era of big intelligence and cloud computing, cultivating innovative and applied talents with big data analysis thinking, adapting to the frontline financial management needs of engineering construction enterprises and other enterprises and institutions, and possessing growth potential in the field of transportation finance". The training objectives emphasize the need for "professional abilities such as financial data processing, financial

information analysis, and financial decision-making services”; In the professional positioning of the Finance major, it is pointed out that “financial technology is the direction of professional development, actively responding to the new round of technological revolution and industrial transformation, and cultivating senior applied talents with international perspectives, innovative thinking, and strong practical ability to meet the needs of economic and social development, with growth potential in the financial field”; The training objectives clearly state that students should possess professional abilities such as financial data processing, data mining and analysis, and financial practical operations, fully reflecting the application of new technologies in economics and management majors.

Secondly, the graduation requirements are more clear, which is formed “4+4+4” goal system. It includes knowledge objectives, ability objectives and quality objectives. The knowledge objectives include instrumental knowledge, subject basic knowledge, professional knowledge, and general knowledge. The ability objectives include four types: knowledge acquisition ability, knowledge application ability, innovation and entrepreneurship ability, and collaborative communication ability. The quality objectives include four parts: ideological and moral quality, professional quality, scientific and cultural quality, and physical and mental quality, including general knowledge, ideological and moral quality, scientific and cultural quality, and physical and mental quality. General knowledge, ideological and moral qualities, scientific and cultural qualities, and physical and mental qualities are common requirements for all majors. General knowledge requires interdisciplinary knowledge such as philosophy, sociology, psychology, political science, law, art, and career development. Ideological and moral qualities require mastering a scientific worldview and methodology, possessing excellent political ideology, social morality, moral cultivation, patriotism, responsibility, and scientific spirit, and being able to practice socialist core values. Scientific and cultural literacy requires a certain level of scientific literacy, artistic literacy, and appreciation ability, as well as a certain understanding of traditional Chinese culture and history. Physical and mental qualities require a healthy physique and physical fitness standards; having good psychological qualities, strong self-control and self-regulation abilities.

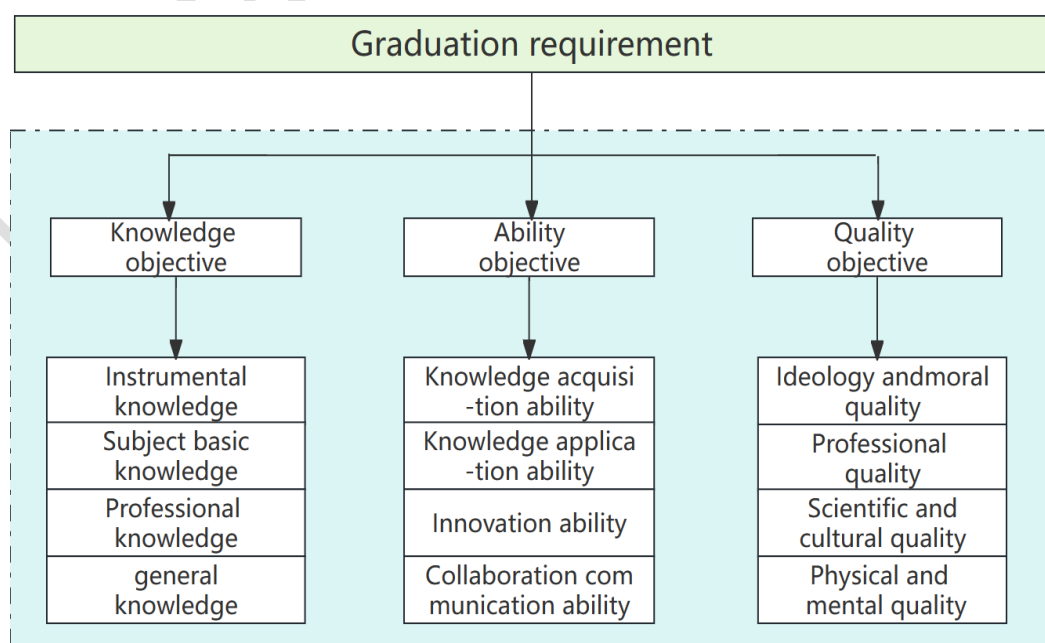


Figure 2. Graduation requirement

Thirdly, the curriculum system more reflects the new liberal arts concepts. Add no less than 10 digital and intelligent courses and interdisciplinary courses for each major, with a proportion of no less than 10% jointly built by schools and enterprises, and no less than 3 courses related to transportation. More emphasis is placed on the integration of professional abilities and mathematical and intellectual abilities in the practical stage. The professional direction is aimed at the urgent demand for economic and management talents in the new generation of information technology.

3.2 Focus on improving course quality

Curriculum is the core element of talent cultivation, and classroom teaching is the main channel and battlefield of liberal arts education and teaching. The School of Economics and Management focuses on strengthening students' ideals and beliefs in the construction of new humanities. We update teaching philosophy, with students as the center, promote the transformation of "management mode" to "governance mode", "management based" to "service based", "teaching centered" to "learning centered", and "discrete approach" to "collaborative approach". Update teaching content, embed information technology into the curriculum system, promote interdisciplinary integration and digital and intelligent reconstruction of teaching content; Update teaching methods, promote the deep integration of information technology and education, build a deep learning field that integrates context and experience, and improve participation in teaching activities. Update the teaching mode, deepen the reform of classroom teaching and practical teaching, promote blended teaching, flip the classroom, and use intelligent teaching tools to construct a new classroom teaching mode of teacher-student interaction. Update teaching evaluation, increase process assessment, integrate big data information, establish and improve a closed-loop mechanism for teaching quality monitoring, feedback, and improvement, align with standard gold course standards, and continue to carry out course reform. Digitally and intellectually transforming the teaching materials, which are the carriers of course learning, on the one hand, integrating artificial intelligence, big data and other technologies into the application of professional fields in teaching design, and developing loose leaf teaching materials; On the other hand, teachers are encouraged to write rich media new forms of three-dimensional textbooks that integrate graphics, text, audio, video, and animation, in order to enhance students' learning interest and effectiveness.

3.3 Promote model innovation

Exploring the deep cooperation model between industry, academia, and research. The Finance major has been conducting school enterprise cooperation since 2012. Through the "six co construction" mechanism with enterprises in talent cultivation, courses, textbooks, experimental training, teachers, and quality assurance, a dual wheel drive model has been formed. Jointly building a modern industrial college with Shandong Talent Group in the fields of digital economy, Human Resources major construct a new model of industry education integration. Financial Management and Auditing majors invite industry experts to enter their classroom or lead students to practical bases to carry out "mobile classrooms". In addition, the college has established a science education integration model where teachers and students think tanks undertake government enterprise research, cultivating the ability of teachers and students to solve professional problems and provide social services.

Exploring a new model of integrating "teaching competition, training, research and

innovation". Subject competitions and professional practical training are important means of talent cultivation. The college attaches great importance to the role of subject competitions in talent cultivation, actively exploring a practical teaching model that integrates "competition+practical training", and encouraging students to participate in various levels of subject competitions. Incorporate subject competitions into talent training plans, set up 3 compulsory credits, and form a "one major, one competition" subject competition system. Build a national, provincial, and school level implementation system for subject competitions in categories A, B, and C, and combine it with professional training. Integrating subject competition content into practical training, start competitive oriented professional training projects, select high-level competitors in practical training, and cultivate students' innovation ability. At the same time, promoting teachers to closely monitor industry development and technological updates, continuously optimizing teaching content, and organically integrating research results with teaching, has played a role in promoting teaching through competition, training, and innovation through research, forming the characteristics of the college's technology brand.

3.4 Accelerate the improvement of the teaching staff

The key to the implementation of the new liberal arts construction lies in the teaching staff. The School of Economics and Management promotes the improvement of teachers' digital and intelligent abilities through measures such as strengthening teacher training, building grassroots teaching organizations, and introducing talents. In terms of training, we will invite well-known experts from domestic and foreign universities and enterprises to carry out a series of special training sessions focusing on ideological and political education, digital literacy, first-class majors, and first-class courses, guiding teachers to apply new concepts, technologies, and theories to course teaching; At the same time, organizing teachers to participate in course training on big data and artificial intelligence, continuously update their knowledge system, and improve their competence in new liberal arts courses. In terms of grassroots teaching organizations, the college has established a research center for curriculum ideological and political education and new forms of teaching, regularly conducting collective lesson preparation, discussion and exchange, observation and training, teaching competitions, and other activities, continuously improving teachers' curriculum ideological and political education and new technology application abilities. In terms of talent introduction, we actively introduce high-level talents with new liberal arts backgrounds from well-known universities, while also hiring visiting professors and corporate mentors from both domestic and international sources, striving to build a first-class teaching team.

3.5 Improve the quality assurance system

Implement the concept of "student-centered, output-oriented, and continuous improvement", based on the cultivation of new liberal arts talents, reconstruct the OBE internal quality assurance system, and build a "goal system monitoring system evaluation system feedback system improvement system" full role and full chain education and teaching quality assurance system. Through the school college professional teacher four level monitoring subjects, carry out three-level closed-loop management of course objectives, graduation requirements, and training objectives, Form a continuous improvement pattern of "circular progressive spiral rise". Improve the quality improvement cycle mechanism of "discovering problems, providing timely feedback, agile response, and effective improvement", and integrate it into all aspects of teaching routine inspection and evaluation work. Implement a "full role" diversified evaluation,

with all teaching stakeholders participating in the evaluation, comprehensively utilizing student evaluation, supervisory evaluation, peer evaluation, leadership evaluation, teacher self-evaluation, and teaching management personnel evaluation to improve teaching quality and enhance the level of new liberal arts major construction.

4. Conclusion

The rapid development of new generation information technologies such as artificial intelligence, big data, and blockchain has led to the emergence of many new formats and models in the economic and social fields. There is an urgent need for higher education institutions to cultivate a large number of new management talents urgently needed by society. The School of Economics and Management of Shandong Jiaotong University responds to the deployment requirements of the Ministry of Education for the construction of new liberal arts, implements the development concept of new humanities, closely relies on industry advantages, focuses on the characteristics of economics and management majors, takes the path of interdisciplinary professional integration, uses artificial intelligence and big data technology, and actively carries out professional intelligence upgrading and transformation. The optimization of professional structure drives the reconstruction of curriculum system, improvement of classroom teaching quality, and innovation of teaching mode. And through the construction of teaching staff and the improvement of quality assurance through digital intelligence, we have achieved iterative innovation and continuous improvement in the field of economics and management.

The practice of the School of Economics and Management of Shandong Jiaotong University has shown that in the process of building new liberal arts, it is necessary to focus on handling the following relationships:

The first is the relationship between new and traditional liberal arts. The new liberal arts mean the new of innovation. We should create new things on the basis of the traditional liberal arts, uphold fundamental principles and break new ground.

The second is the relationship between change and immutability. What remains unchanged is basic knowledge and skills, and what needs to be innovated is teaching content and methods. While consolidating the professional foundation, we constantly innovate teaching methods and content.

The third is the relationship between scientificity and value. We must adhere to the unity of scientificity and value, and achieve dual promotion and enhancement of students' ideological, moral, and professional knowledge.

The fourth is the relationship between localization and internationalization. New liberal arts should not only absorb foreign essence, but also be based on national conditions to fully reflect the characteristic requirements of localization.

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