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Research on the Construction of Statistics Graduate Course System under the Background of Education Digitization—— Based on the Analysis of the Training Programs of Statistics Graduates of 10 Universities in Hubei Province

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Abstract: The study of university talent training programs is the key link to promoting the construction of high-quality curriculum systems in colleges and universities. In this study, we selected ten universities in Hubei province for statistics majors as an example used text analysis to analyze the curriculum of universities and found that there needs to be more curriculum structure for statistics majors universities. Specifically, the credits of public compulsory courses are between 20~30%, professional courses are about 50%~60%, elective courses are about 30%, compulsory courses are about 70%, and practical courses are about 15% and 20%. When formulating talent training programs, colleges and universities should comprehensively consider the individual development needs, the internal logic of the knowledge system, the national education strategy and the market development trend, and promote the overall improvement of the talent training quality of statistical professionals through the synergistic effect of multi-logical paths.

1. Introduction

The report of the 20th National Congress of the Communist Party of China (CPC) for the first time included “promoting the digitization of education” in the report, and General Secretary Xi Jinping emphasized that China should be committed to “promoting the digitization of education, building a learning society and a learning country with lifelong learning for all people”. Education is the cornerstone of national revitalization and social progress, and the promotion of high-quality development of education needs to rely on the power of digitization. On July 29, 2020, Xi Jinping

emphasized at the National Conference on Postgraduate Education that postgraduate education plays a crucial role in cultivating innovative talents, enhancing innovation capacity, serving economic and social development, and promoting the modernization of the national governance system and governance capacity. Graduate education is not only an important indicator of the competitiveness of a country's higher education, but also a major source of high-quality talent reserves, a core force in scientific and technological competition, and a key element in the implementation of the innovation-driven development strategy.

With the deep integration of digital technologies such as the Internet of Things and artificial intelligence with graduate education, the mission vision, structural form, and operational mechanism of graduate education management organizations are undergoing profound changes, and the traditional management organization form is facing being subverted and reshaped. Statistics is widely used in various fields and has an important status. Since the beginning of New China, statistics education has been mainly based on the principles of statistics, and with the establishment and development of the market economic system, the training of talents has gradually become institutionalized and standardized. In the era of big data, the scope of application of statistics is expanding, and statistical technology is also developing, which brings new opportunities for the development of statistics majors in colleges and universities. How to adjust the curriculum system of statistics majors and cultivate students who meet the needs of the times has become the focus of attention of the statistics community. Therefore, effectively transforming the potential of digital technology into the driving force and potential energy to promote the development of graduate education has become the core topic of the reform and development of graduate education in the new era. Under the background of digitalization of education, re-examining and reconstructing the curriculum system of master's degree students is of great practical significance for adapting to the requirements of the development of the times.

The digital transformation of education marks the comprehensive transformation of the goals, methods and achievements of the education field, driven by digital technology. This transformation involves three core levels: digitization of people, digitization of things and digitization of things. To be specific, the digital transformation of education aims to promote the development of students, take the essence of education as the constant purpose, guide the deep integration of digital technology and intelligent technology and school education, and build an education ecosystem of harmonious coexistence between man and machine. At present, the digital transformation of graduate education in China is progressing steadily, but it still faces many challenges. For example, there needs to be more attention to personalized teaching, the curriculum content is too professional without interdisciplinary courses, the proportion of practical courses is low, and the curriculum system needs to be more scientific, normative, innovative and flexible. In view of these problems, the scholars put forward the principles and reform suggestions that should be followed in the graduate curriculum. Friedrichs Linn (2021) In the research of American curriculum development, pay attention to teaching students in accordance with their aptitude, and the curriculum setting is comprehensive, elective and diversified, Liz Jackson (2020) points out that courses should be set up according to social needs, professional characteristics, school advantages and individual needs. Some scholars believe that the content should be enriched, the proportion of practical and innovative courses should be reasonably increased, the innovative graduate education characteristic curriculum system should be built, and the curriculum evaluation system. Li Feng (2021) believes that the traditional training mode should be broken through, the course content should be reasonably updated, and the advanced nature of the course content should be maintained. VBesseah Bernard (2017) In the study of graduate courses in South Africa, we proposed to strengthen the cultivation of graduate information literacy and focus on the cultivation of digital and research literacy.[错误!未找到引用源。]

A large number of research results in academic circles have laid a solid theoretical foundation for

this research. Through combing the existing literature, it is found that the existing literature mainly focuses on the problems faced by education digitally enabling vocational education, adult education and higher education, and there needs to be more research on the quality improvement of education digitally enabling graduate education. Based on this, this research adheres to the research idea of deep focus and analysis, anchors the research perspective on the realistic state of the curriculum system construction of master of statistics in ten universities in Hubei Province, and studies the curriculum system construction based on the corresponding talent training program. The aim is to extract the common characteristics of different universities in the curriculum of statistics master of statistics through the text analysis of the curriculum of these ten universities, and identify the existing problems and deficiencies. Based on these analyses, this study will propose specific optimization recommendations aimed at improving the quality of statistical professionals. This not only provides a reference idea for the optimization of statistical academic master courses in other universities in Hubei Province, but also provides a reference for the improvement and improvement of master student training programs in other majors.

2. Research Design

2.1. Research object

In order to ensure the scientific nature and rationality of the research results, this study strives to be universal in the sample selection. The latest talent training program of ten universities with a master of statistics major in Hubei Province is selected as the research object in order to reveal the common problems of statistics curriculum in universities in Hubei Province. See the details of each sample university in Table 1.

Table 1 Information list of the 10 sample universities in Hubei Province

The Enrollment unit and the code	Colleges and universities type	name of major	College status	Time of the culture protocol revision
(10486) Wuhan University	general works	statistics	985, 211	In 2022,
(10487) Huazhong University of Science and Technology	Engineering class	statistics	985, 211	In 2018,
(10491) China University of Geosciences (Wuhan)	Engineering class	applied statistics	211	In 2022,
(10497) Wuhan University of Technology	Engineering class	statistics	211	In 2023,
(10500) Hubei University of Technology	Engineering class	applied statistics	Provincial key colleges and universities	In 2020,
(10504) Huazhong Agricultural University	Agricultural class	applied statistics	211	In 2022,
(10511) Central China Normal University	normal category	statistics	211	In 2021,
(10512) Hubei University	general works	applied statistics	Double first-class	In 2016,
(10520) Zhongnan University of Economics and Law	Finance and economics	statistics	211	In 2016,
(10525) Hubei Institute of Automobile Industry	Engineering class	statistics	General institutions of higher learning	In 2023,

2.2 Research methods

This study selected 10 universities engaged in the education of statistics for the master's graduate of statistics in Hubei Province. The research focuses on the distribution of total course credits, the allocation of professional course credits, the allocation of compulsory courses and elective courses, and the proportion of theoretical and practical course credits aiming to reveal the current situation and existing problems of the graduate course system construction of statistics majors in Hubei Province. Moreover, this study focused on the differences in the curriculum of different types of institutions. Through the comparative analysis of the talent training program of high-level universities and ordinary universities in Hubei province, this study puts forward targeted improvement suggestions. These suggestions aim to promote the characterization of professional curriculum settings in science and technology universities, avoid the development trend of homogenization, and help to more deeply understand and solve the core problems and challenges of curriculum system construction from the perspective of inter-university differences.

3. Characteristics and problems of credit distribution of statistics professional talent training program

The talent training program of colleges and universities mainly includes talent training objectives, curriculum setting and teaching plan, credit setting, graduation requirements and other contents. In the professional training program, the allocation of course credits reflects the characteristics and objectives of talent training in this major and reflects the concept of universities in talent training and course design. In this study, we examined the talent training programs of statistics majors in 10 universities and compared the total credits of graduates, the credits of different types of courses, and the credit distribution of statistics majors under the background of educational digitization. The following are the specific study findings.

3.1. Credit characteristics of the courses of the 10 universities

1. Total graduation credit requirements

According to the statistical analysis of 10 universities in Hubei province with masters of statistics majors, this study found that the total credits of most universities for masters of statistics students are between 30 and 45 credits. Specifically, the average total score of the statistics graduate students in 985 and 211 universities was 35.6, while the average total score of the other three universities was 38 credits. This shows that the total credits of 985 and 211 universities in Hubei province are lower than those of ordinary universities. At present, there is no unified score standard for the credit system of master's students in China. Although there is no unified credit system standard for master's students in China, universities usually formulate their credit system according to the regulations and guidance of the Ministry of Education and other relevant departments. It can be seen from the analysis that the ten universities recruiting statistics majors in Hubei province have certain commonness and standardization in the total credit setting. The distribution of total credits in the training program of 10 universities in Hubei province is shown in Figure 1.

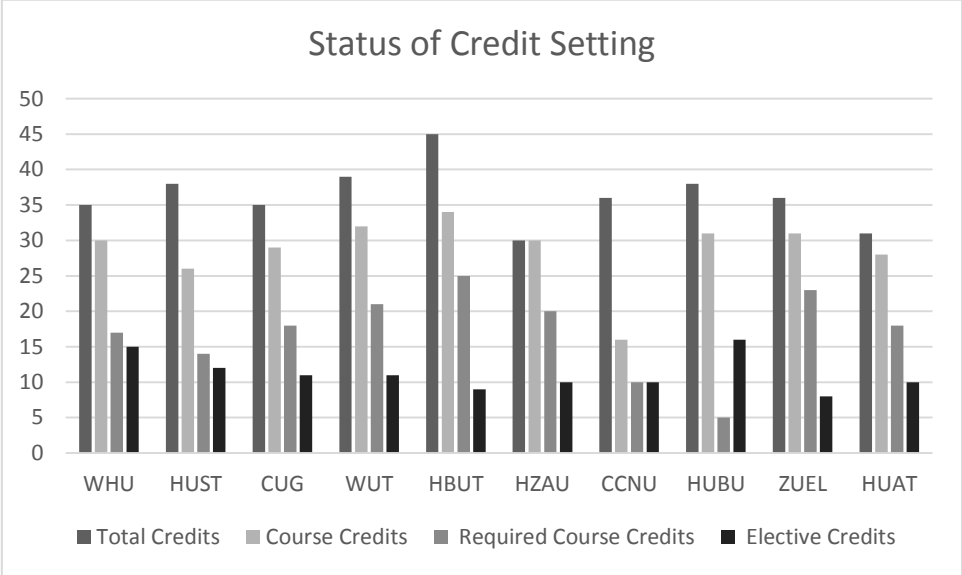

Figure 1 Total credits of statistics majors in the 10 universities in Hubei province

Table 2. Total credits of high-level and local universities

The type of university	sample size	Credit average	Credit standard deviation	least value	crest value
High-level colleges and universities	7	35.6	2.66	39	30
Ordinary colleges and universities	3	38	3.74	45	31

3.2. Distribution of credits of different types of courses

In the traditional education system of master's students, the curriculum structure usually includes public basic courses, professional basic courses and professional elective courses, accompanied by practical links, academic activities and thesis work. These projects are usually interspersed among the above three major course types. Through the analysis of the master's talent training program of statistics majors in 10 universities in Hubei Province, this study observed that the current curriculum mode of statistics majors in various universities has gradually evolved into "public compulsory courses + subject courses + academic activities," supplemented by "practical links." In this mode, academic activities mainly include participation in academic conferences, writing academic reports and other forms. Among them, Wuhan University, for example, as a high-level university, there is also an imbalance in its credit setting, with low practical credits. The details of the credit distribution are shown in Figure 2 and Figure 3.

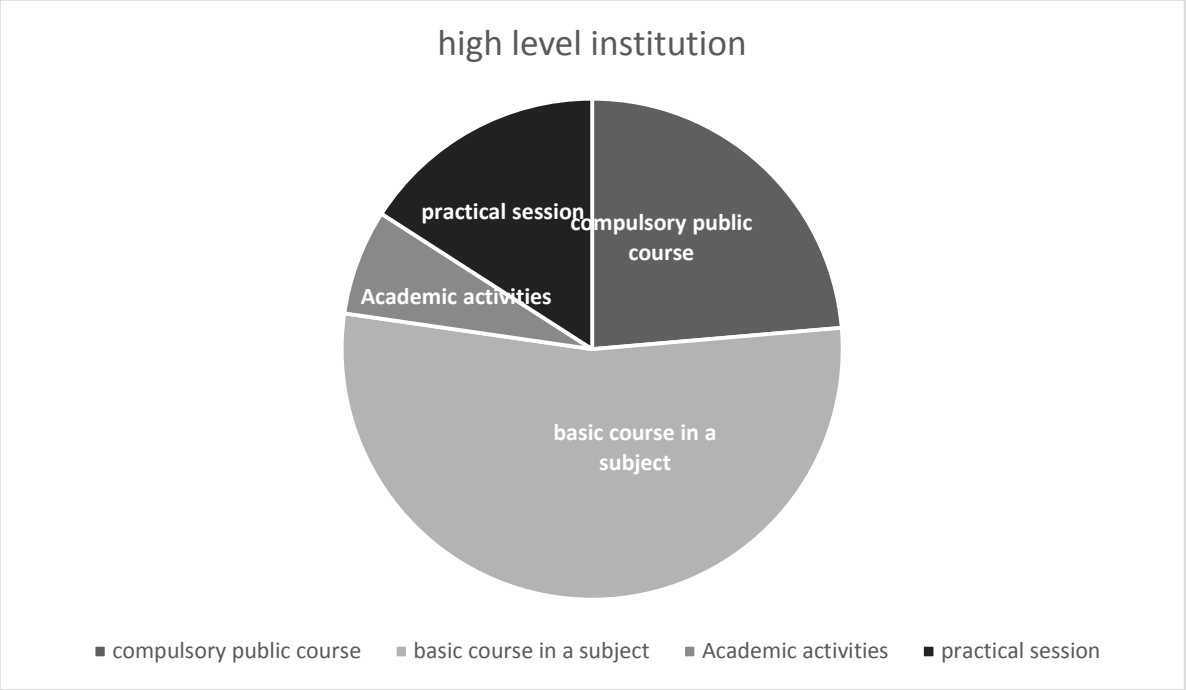

Figure 2 The credit ratio of statistics major courses in high-level universities

In the curriculum of master of statistics in high-level universities, the average score of public compulsory courses is 7.4, accounting for 24%; the average score of basic courses is 16.86, accounting for 54% of the total credits; the average score of practice is 5, accounting for 16% of the total credits; and the average score of academic activities is 2.14, accounting for 7% of the total credits.

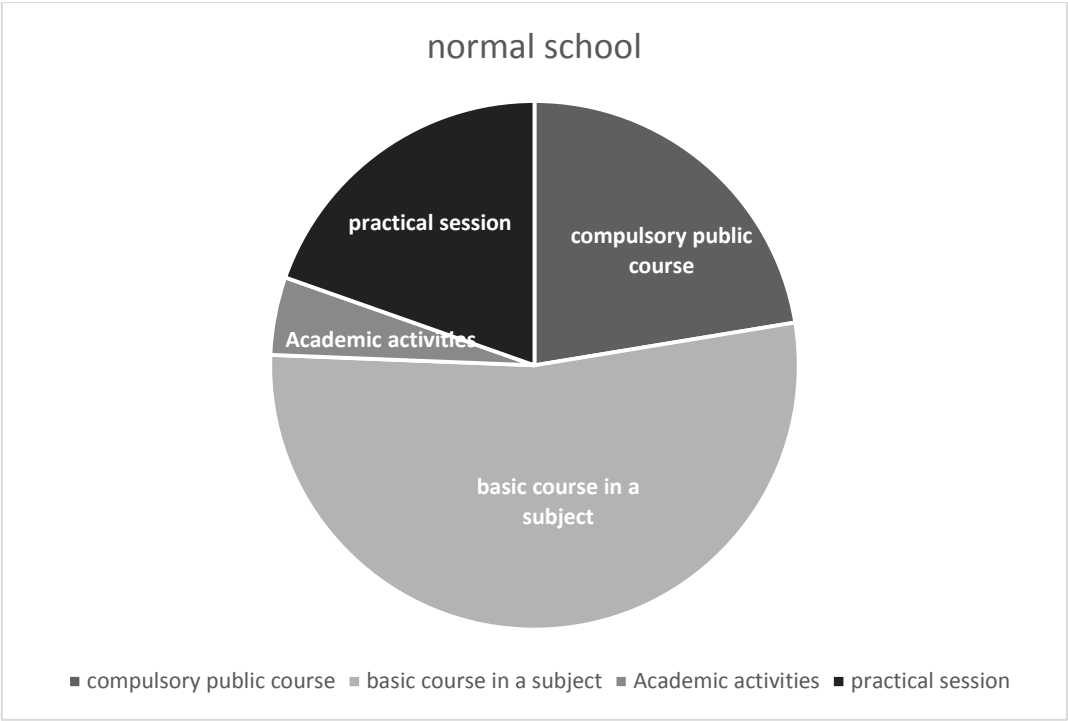

Figure 3 The credit ratio of statistics major courses in local universities

In the curriculum of statistics master in local universities, the average score of public compulsory courses is 8 credits, accounting for 22% of the total credits; the average score of basic subjects is 19 credits, accounting for 53% of the total credits; the average score of practice links is 7 credits, accounting for 20% of the total credits; and the average score of academic activities is 1.7 credits, accounting for the lowest proportion and only 5% of the total credits.

The analysis results show that in the statistical courses of the two types of universities, the basic courses are the first in the proportion of credits, followed by the public compulsory courses, while the credit proportion of academic activities is far lower than the former two. In terms of the difference in the credit distribution of the two types of universities, There are four main differences: First, Local universities' credits and proportion are slightly higher than those of high-level universities, The average credit is 2.14 credits higher, For 53% of the total credits; next, From the perspective of public compulsory courses, The credits and proportion of ordinary colleges and universities are slightly higher than that of high-level colleges and universities, The average credit is only about 0.57 credits higher; third, In terms of the academic activities, The average credit and proportion of high-level universities are higher than that of ordinary universities, This may be due to the high-level universities have more abundant teaching resources, stronger academic atmosphere and higher academic requirements; last, In terms of practical links, The average credit of ordinary universities is 2 credits higher than that of high-level universities, The details are shown in Table 3.

Table 3 Credit status of high-level and general universities

Credit situation / Subject Course	Average credits		Proportion of total credits	
	High-level colleges and universities	Ordinary colleges and universities	High level colleges and universities	Ordinary colleges and universities
Subject professional courses	16.86	19	54%	53%
Public compulsory course	7.43	8	24%	22%
Practice link	5	7	16%	20%
academic activities	2.14	1.7	7%	5%

3.3. Problems and causes existing in the course structure

(1) The imbalance of the proportion between theoretical courses and practical courses

In ordinary colleges and universities, theoretical courses account for about 78 percent of the credits, while in high-level colleges and universities, this proportion also accounts for 75 percent. In terms of practice, ordinary universities only account for 20% of the total credits, while the proportion of high-level universities is as low as 16%, slightly lower than that of ordinary universities. The increase in practical courses for graduate students not only enhances students' practical skills, but also promotes the integration of theoretical knowledge and practical skills. According to a study, graduate students who participate in practical courses have about 15% higher employment rate after graduation than those who do not. In addition, practicum courses can provide opportunities for close contact with the industry, enabling students to better understand and adapt to the future work environment.This proportional imbalance may stem from multiple factors. On the one hand, the theory of education courses in the public compulsory part mostly by the competent department of education regulation (such as graduate student English reading and writing, the new era of theory and practice of socialism with Chinese characteristics, natural dialectics, etc.), therefore, the notice on further standardize and strengthen the management of graduate student

training about the requirements of graduate student "scientific literacy" training to a large extent need to through the elective part of theory course to achieve. After analyzing the talent training programs of statistics majors in 10 colleges and universities, it is found that although the elective credits of theoretical courses are higher than the required credits, they only involve specialized courses, and the traditional public basic courses still occupy the absolute credit proportion in the theoretical courses. Some elective credits of the theoretical education courses in the 10 universities are between 8 and 15 credits. Although most elective courses are abundant, it is difficult for students to achieve rapid improvement in their scientific literacy based on the existing theoretical courses due to too few disposable credits. In addition, there are too many theoretical courses and relatively few practical courses, which makes it difficult for students to apply what they have learned to solve practical problems.

(2) The curriculum setting of practice links and academic activities is inaccurate

Statistics, as an independent first-level discipline, has been established for a relatively short time in graduate education, and it has not been officially established since 2011. Due to the limited time of discipline construction, many universities may not have yet reached the degree of perfection in the training plan of statistics and its research direction, which may lead to the ambiguity of the teaching system and further affect the full setting of practical links and academic activity courses. Although the national education policy emphasizes the cultivation of high-quality talents with innovative and practical ability, in practice, the curriculum of colleges and universities is often limited by traditional educational concepts, with too much emphasis on the teaching of theoretical knowledge, but failing to pay full attention to the importance of practical links and academic activities. According to the analysis of the training programs of 10 colleges and universities, whether "high-level colleges" or "ordinary colleges," public compulsory courses occupy a large proportion of the curriculum, which not only reflects the importance universities attach to basic knowledge but also exposes the neglect of practical links and academic activities in the curriculum. This curriculum model may lead to students' lack of necessary practical experience and problem-solving skills when facing practical problems. According to statistics, more than 60% of graduate students report that the curriculum is insufficient in practical aspects and too intensive in theoretical courses. This imbalance leads to students' lack of ability when it comes to practical work. Meanwhile, a survey of 500 graduate students shows that only 30% of them believe that their curriculum can meet the demands of practical work. This suggests that we need to re-examine and adjust our curriculum to ensure that graduate education is closer to practical applications.

In addition, most of the graduate course design in China adopts the subject-centered model, which overemphasizes the knowledge system of the discipline itself and the integrity of the course content, but tends to ignore the horizontal connection and practical application between disciplines. This may lead to a too-theoretical curriculum and a lack of practical links combined with practical problem-solving. Therefore, it is necessary to examine and adjust the existing curriculum setting to ensure that the practical links and academic activities are properly valued and strengthened, so as to better cultivate students' practical ability and innovative spirit.

In high-level universities, the average score for compulsory courses is 20.71 credits, accounting for 70% of the total credits, while the average score for elective courses is 8.71 credits, accounting for 30% of the total credits. In ordinary colleges and universities, the average score for compulsory courses is 24 credits, and the average score for elective courses is 10.3 credits. In general, compulsory courses occupy the dominant position in the graduate courses of statistics in China's universities. The credits of compulsory courses in most universities account for more than 70% of the total credits, while the credits of elective courses are less than 30% (see the figure below). The reason for this proportion imbalance may be that, on the one hand, postgraduate training emphasizes the systematic learning of basic theory and professional knowledge to ensure that students have a

solid academic foundation and core professional competence. Policy orientation usually tends to strengthen the common education and basic quality training of graduate students, which leads to more curriculum setting focusing on required courses to meet the basic academic standards set by the education department. On the other hand, with the continuous improvement of the requirements for graduate education quality, in order to cultivate high-level statistical talents who can meet social needs, the setting of compulsory courses pays more attention to the comprehensiveness and depth of knowledge, so as to increase the number of compulsory courses to ensure that students lay a solid foundation.

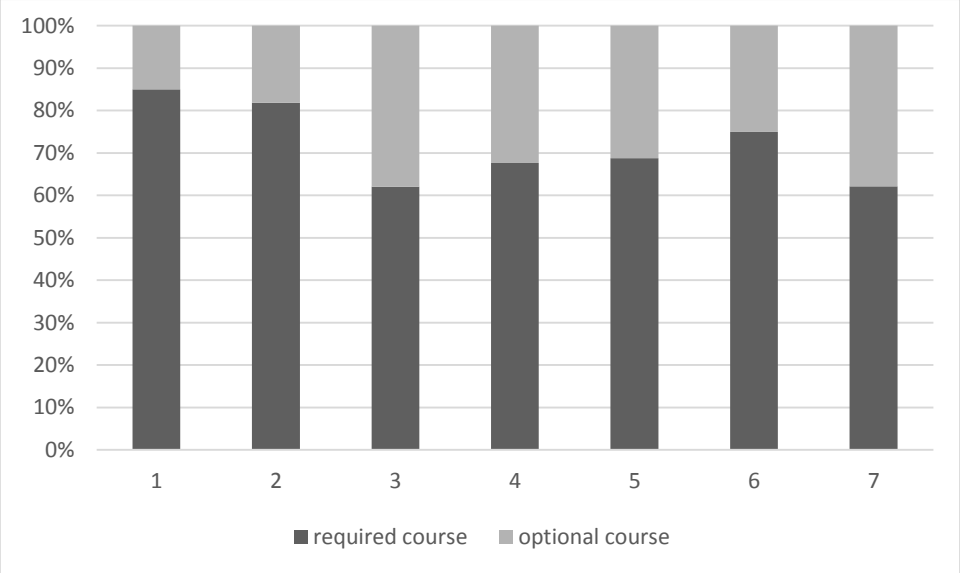

Figure 4 The portion of compulsory courses and elective courses in high-level universities

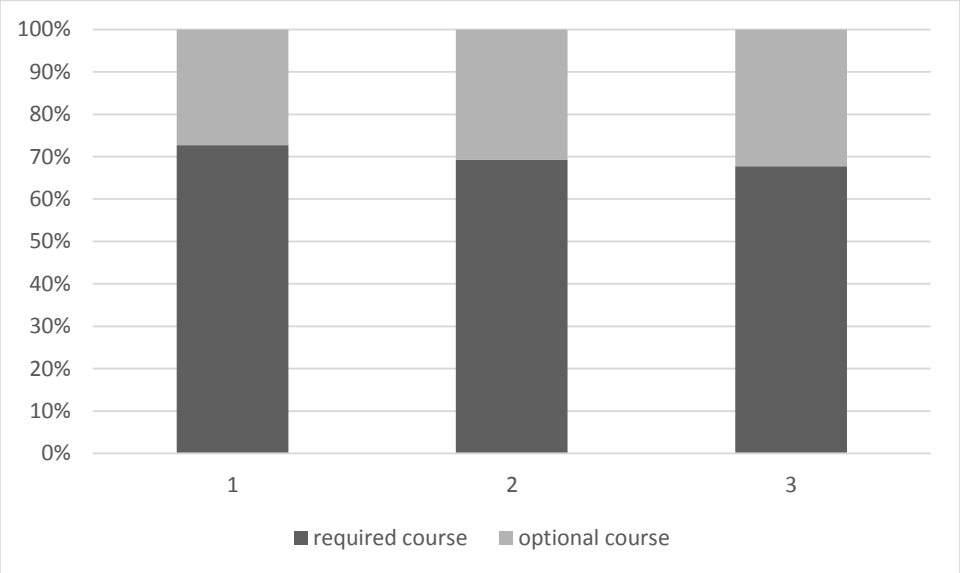

Figure 5 The portion of compulsory courses and elective courses in ordinary colleges and universities

(3) Lack of personalized training programs and the lack of interdisciplinary courses

At present, the curriculum system of statistics majors in most colleges and universities is still

based on the simple and linear understanding of "quality + major," which leads to the rupture of the connection between public courses and subject courses and the lack of effective integration and penetration. Although the Ministry of Education the cultivation of graduate students emphasizes academic ability, scientific research innovation ability and practical ability of comprehensive promotion, in the actual execution, due to the rigidity of discipline boundaries, teaching resources allocation and teachers' understanding of interdisciplinary teaching and insufficient preparation, comprehensive development and implementation of modular curriculum is facing many difficulties. Through the 10 universities' statistics courses open frequency in the top five-course name for statistical analysis (see the table below), we found that the traditional "old" (multiple statistics, time series and data mining) course dominated in the statistics course, and the interdisciplinary comprehensive modular course is relatively lack. The main reason for this situation is that, on the one hand, multivariate statistics, time series analysis and data mining, as the classic courses in statistics, have a profound historical accumulation and extensive influence in theory and application and have formed a set of mature theoretical system and teaching methods. In contrast, interdisciplinary comprehensive courses need to integrate the knowledge of multiple disciplines, and their curriculum system and teaching methods are still being explored and improved. In addition, the establishment of interdisciplinary courses requires teachers to have a broader knowledge background and stronger integration ability, which puts forward higher requirements for teachers. On the other hand, under the existing education system, the setting and assessment of traditional curriculum are more mature and stable, while the promotion and implementation of interdisciplinary curriculum may face more challenges and uncertainties. At the same time, the market demand for statistical talents is mainly concentrated in the traditional statistical field, which to some extent strengthens the main position of the "old three" courses.

Table 4 Names of the top five courses in the course offering frequency

course title	credit	frequency (N)≤ 10
Theory and practice of socialism with Chinese characteristics for the New Era	2	10
English reading and writing	2	10
dialectics of nature	1-2	9
multivariate statistical analysis	2-4	9
analysis of time series	2	7
data mining	2-4	5

4. Suggestions on optimizing the curriculum setting of Master of Statistics under the background of education digitization

As early as 2012, the Ministry of Education has clearly pointed out in Several Opinions on Comprehensively Improving the Quality of Higher Education that the development of higher education should adhere to the connotative development path, and colleges and universities should formulate scientific talent training programs according to the actual situation. This guideline not only lays the foundation for the connotative development of higher education but also reflects that it is a complex and challenging task to build a scientific talent training system. The design of the talent training system is complex because it has many stakeholders and needs to take into account the level of the operation mechanism. Therefore, the formulation of a higher education talent training program must be a process of multiple integration, system layout and continuous evolution.

As a special field of teaching data science knowledge and analysis methods in higher education,

the construction of a talent training program is particularly complicated. If we only focus on the redistribution and adjustment of course credits, only put forward opinions on the specific problems in the current statistical professional talent training program, but ignore the deep logic of the problems that may be hidden behind, then we will not be able to deeply understand and touch the logical mechanism behind the nature of the problem. The severity of the problems existing in the talent training program in colleges and universities is different, and the effect of running schools will also be different. According to the research, the outstanding common problems in the current talent training program of industry-characteristic universities are the imbalance between theoretical courses and practical courses, the imbalance of credit ratio, and the imbalance of the ratio between compulsory courses and elective courses. Some researchers point out that the university talent training program should follow multiple logic, including national logic, knowledge logic, market logic and personal logic. Based on the problems found, the specific recommendations formed in this study are as follows.

4.1 Follow the law of knowledge development: build comprehensive curriculum content under the guidance of innovative educational concepts

In the real education environment, the established form of knowledge production mode determines the concept and mode selection of talent training programs to a large extent. Through the analysis of the curriculum setting of the statistics major talent training program of 10 universities in Hubei Province, this study finds that most universities still follow the traditional discipline knowledge production mode in the curriculum construction of statistics major, rather than the more advanced "interdisciplinary knowledge reorganization" mode. At present, the curriculum system of statistics majors in colleges and universities lacks personalized training programs, as well as interdisciplinary comprehensive modular courses. Whether it is a public basic course or a professional course, its content construction is often based on the idea that "knowledge itself is the purpose".

Therefore, while following the law of knowledge development, the statistics major of colleges and universities should abandon the long-term rationalism and subject paradigm worship in the selection of course content and promote the construction of an "interdisciplinary" knowledge group in the public basic course. This means that we should choose the subject content that reflects the characteristics of The Times and can meet the needs of scientific literacy so as to build an integrated course integrated with the courses "Graduate English Reading and Writing Dialectics of Nature". On the other hand, research shows that the proportion of professional courses in statistics is about, which is relatively high. Therefore, it is necessary to reasonably adjust the proportion of theoretical courses and practical courses according to the characteristics of subjects and knowledge systems so as to ensure that students can not only master a solid theoretical foundation but also have practical operation skills. Because whether the public basic course or the subject specialty course, it plays an indispensable role for students majoring in statistics. Therefore, in the construction of the curriculum system of statistics majors, all colleges and universities should promote the innovation and optimization of professional courses and public basic courses under the guidance of the new knowledge production mode.

4.2 Implementing the national policy orientation: Optimize the curriculum system according to the policy norms

The formulation of talent training programs in colleges and universities should follow the national policy guidance specific to the curriculum system, that is, to ensure that the credits of public basic courses are fully guaranteed. Scholar Zhang Yuhua's research also emphasizes the key

role of school curriculum planning in the implementation of national curriculum policies. She pointed out that school curriculum planning is a bridge to transform the national curriculum policy into students' actual learning experience and is crucial to the realization of the national education goals. However, due to the obstacles in the implementation of national policy logic, it is easy for self-interest competition among different interest subjects to occur in the training process of statistics professionals, which may affect the improvement of the training quality of students majoring in statistics.

According to the study, the public compulsory courses in 10 universities in Hubei account for about 20% to 30% of the credits, mainly in response to national policy requirements. The credit ratio of public compulsory courses and subject and major courses is relatively unbalanced. Therefore, on the one hand, colleges and universities need to conduct in-depth interpretation and analysis of the current systems and norms, and strive to improve the scientific and targeted national training standards for statistics graduate students. Establish an effective curriculum quality evaluation mechanism and regularly review the curriculum setting of colleges and universities to ensure that they meet the national educational standards and requirements. At the same time, the relevant educational administrative departments should improve and optimize the curriculum content indicators of statistics majors on the basis of considering other professional standards so that all statistical majors can follow clear standards in the curriculum setting. On the other hand, the proportion of theoretical and practical courses, as well as the setting standards of compulsory and elective courses, are needed to ensure the balance and scientificity of the higher education curriculum system. At the same time, the statistics majors of colleges and universities should also promote the construction and improvement of the supporting system matching the talent training program, including the provisions of professional talent training objectives, graduation academic requirements, and professional core courses, so as to ensure that the construction of the statistics major curriculum system of colleges and universities is promoted in an orderly manner on the basis of legitimacy and rationality.

4.3 Adapt to the changes in market demand: turn to the market demand and jointly innovate the curriculum system

To some extent, the talent training program of universities must adapt to the changes in the market demand to ensure the cultivation of talents that meet the needs of the market. When cultivating talent, colleges and universities should not only meet the needs of national economic and social development but also adapt to the specific requirements of the industry for talent and adapt to the evolution of market demand. According to the research, among the 10 universities in Hubei Province, the proportion of credits of practical courses is about 16% to 20%, which is relatively low, so it is necessary to appropriately increase the proportion of credits of practical courses.

For students in the basic subject of statistics, there is a realistic disconnect and separation between theory-based school learning and practice-based future work. This disconnect cannot meet the actual needs of the market, leading to the gradual weakening of the function of students' professional services. In view of this, this study believes that, on the one hand, universities should adjust accordingly according to their training objectives and the construction requirements of "four new" majors (new medical science, new engineering, new agricultural science and new liberal arts). This adjustment is not only the increase of the proportion of credits on the surface but, more importantly, giving play to the effect of teaching practice in educating people. Specifically, colleges and universities, in the design of talent training plans, should increase the proportion of practice course credits and hours, at the same time, integrate subject content, rich practice course type, adjust the course structure, and through the planning of hierarchical curriculum system to promote

students' learning, implementation from theory to practice, from basic to professional transformation.

On the other hand, colleges and universities should pay close attention to the needs of local economic and social development, strengthen market research, understand the development trend of the industry, and timely adjust the professional Settings. On the basis of the existing majors, cutting-edge interdisciplinary disciplines such as artificial intelligence and green energy can be added according to the market demand to cultivate talents with innovative spirit and practical ability. At the same time, the practice teaching link should promote the integration of theory curriculum and practice course, better realize science and education in the training system in scientific research training component through research teaching to help students master the core technology, cultivate the spirit of scientific research and innovation consciousness, realize the combination of theory and practice.

4.4 Pay attention to learner subjectivity: build the concept of "people-oriented" and improve the curriculum system

In the formulation of university talent training programs, we should pay full attention to the subjectivity of learners, which not only involves their learning methods but also includes their opinions in the programs to promote their future learning. As the British educator Newman emphasized, “If the purpose of a university is only to pursue scientific or philosophical discoveries, then what is the significance of students' existence in universities?” Therefore, universities should not only serve the market demand but also serve the growth and success of individual students. Specifically, this means that there should be a certain credit balance between elective courses and required courses.

However, according to the results of this study, among the 10 universities providing statistics majors in Hubei province, the credits of elective courses account for about 30%, while compulsory courses account for 70%, which indicates that students have limited freedom in course selection and students are in a "state of" aphasia " in the talent training program. In order to solve this problem, colleges and universities need to dig deep into students 'interest in learning and adjust the credit ratio of compulsory courses and elective courses to leave some space for students' personalized and diversified development. Therefore, on the one hand, colleges and universities should realize that giving students greater autonomy is the key to the maturity of their talent training programs. In the construction of the curriculum system of statistics majors, the proportion of elective courses should be gradually increased, and the credit proportion of compulsory courses should be appropriately reduced. By giving students more freedom to choose courses, they can choose courses on the basis of considering their interests, abilities, hobbies and career planning so as to improve the quality of training. At the same time, while adjusting the proportion of courses, colleges and universities also need to strengthen the guidance of course selection and avoid the problem of students' blind course selection through the tutor responsibility system and other ways. On the other hand, in the process of constructing the talent training program, the suggestions and needs of students should be widely adopted to avoid the subjective "aphasia" of students in the process of curriculum participation. In addition, in order to meet the needs of students' personalized development, colleges and universities should provide diversified course choices and encourage students to participate in activities such as academic research, innovation and entrepreneurship, and social practice to broaden their horizons and experiences.

Funding

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Project 3: General Project of Hubei Education Science Plan in 2023 “Research on the Mechanisms and Paths of Educational Digitization Enabling High-Quality Development of Hubei Higher Education(2023GB032).”

Project 4: Key Project of Chinese Association of Higher Education “Local Elements into the Reform and Innovation of University Curriculum Ideological and Political Teaching (23DF0304).”

Project 5: Provincial Teaching Reform Research Project of Undergraduate Colleges in Hubei Province in 2023“Research on Concept Innovation and Path Optimization of OMO Teaching Mode for Graduate Students under the Background of Digital Education (2023411).”

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