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ACADEMIC ADMINISTRATION APPROACHES OF THE INTERDISCIPLINARY MINOR PROGRAM FOR ENHANCING STUDENTS' ABILITIES AT MIANYANG CITY COLLEGE, CHINA

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Abstract

The objectives of this research were: 1) to investigate the problems and needs of students, faculty, and administrators regarding interdisciplinary minor programs; and 2) to develop academic administration approaches for interdisciplinary minor programs that enhance students' comprehensive competence. The study employed a mixed-methods design using stratified random sampling. The sample included 296 second-year students and 76 teachers and administrators from Mianyang City College. The research instruments consisted of questionnaires and focus group discussions. The questionnaires were reviewed by experts and validated using the Index of Concordance (IOC). Data were analyzed using percentages, means, and standard deviations.

The findings revealed that: 1) interdisciplinary minor programs faced issues such as curriculum conflicts, insufficient faculty collaboration, lack of academic guidance, and weak career support. These problems mainly resulted from inadequate curriculum coordination, limited collaboration mechanisms, and a single assessment model; and 2) the proposed academic administration approaches included curriculum integration, interdisciplinary teacher collaboration, diversified assessment, a dual-mentor system, and digital support for career development. These recommendations provide practical guidance for improving academic management and promoting reform in higher education institutions.

Keywords: Interdisciplinary Minor, Academic Administration, Student Empowerment

Introduction

Against the backdrop of globalization and the rapid development of the knowledge economy, society is increasingly demanding multidisciplinary talents with interdisciplinary skills and comprehensive abilities (OECD, 2019). While traditional single-disciplinary education has advantages in cultivating professional skills, it is no longer able to meet the increasingly complex demands of society and industry (Chen, 2020). Therefore, interdisciplinary education has become an effective way to promote students' innovation and problem-solving abilities, helping to break down disciplinary barriers, build a multidimensional knowledge structure, and enhance students' adaptability and competitiveness (OECD, 2019; Chen and Luetz 2020).

In China, higher education is shifting from "scale expansion" to "quality improvement." The Ministry of Education and related policy documents emphasize that universities should strengthen interdisciplinary integration, explore new talent development models, and enhance students' innovative spirit and employment competitiveness (Ministry of Education, 2018). Interdisciplinary minor programs have become a key measure in higher education reform, enabling students to expand their knowledge and perspectives beyond their major, thereby improving their comprehensive abilities (Wang, 2020).

However, the implementation of interdisciplinary minor programs still faces many challenges. Research has shown that many universities' curriculum designs tend to be formalistic, lacking systematic and forward-looking structures, making it difficult to effectively translate knowledge into practical skills (Guo, 2024). Furthermore, cross-departmental faculty collaboration and resource sharing are insufficient, the teaching support system is incomplete, and some courses lack sufficient resources and guidance (Marbach-Ad et al., 2019). Moreover, the student course selection process is complex, and the evaluation methods for learning outcomes are limited, making it difficult to fully reflect the development of interdisciplinary skills. These issues hinder the improvement of students' comprehensive abilities.

Mianyang City College has actively responded to educational reforms in recent years, offering interdisciplinary minor courses in fields such as education, management, economics, and computer science, laying a foundation for students' interdisciplinary literacy. However, problems such as insufficient curriculum integration, imperfect faculty collaboration mechanisms, and uneven allocation of teaching resources persist, hindering students' learning experiences and ability development.

To further shed light on these issues and explore solutions, this study aims to propose scientific academic administration approaches, optimize the implementation of interdisciplinary minor programs, enhance students' comprehensive abilities and employability, and provide theoretical and practical references for China's higher education reform and interdisciplinary talent development.

Objectives of this Research

1. To investigate the problems and needs of students, teachers, and administrators in interdisciplinary minors from the perspective of improving the comprehensive capabilities of college students.

2. To develop academic administration approaches for interdisciplinary minor programs at Mianyang City College in China based on the perspective of improving the comprehensive abilities of college students.

Research Methodology

This study employed a mixed-methods research design, combining a quantitative questionnaire survey with qualitative focus group discussions. The samples were students, teachers, and administrators enrolled in interdisciplinary minor programs at Mianyang City College.

1. Population and Sample

The sample for this study was selected using a stratified random sampling method to ensure representation from different stakeholder groups. A total of 372 participants were included, comprising 296 second-year students and 76 teachers and administrators from Mianyang City College. The stratification was based on participant roles within the interdisciplinary minor programs to obtain balanced perspectives from both students and academic staff. This approach allowed the researcher to collect data that accurately reflected the diverse experiences and viewpoints relevant to the study objectives.

2. Data Collection Instruments:

This study employed two data collection instruments: a questionnaire and focus group meeting.

The questionnaire was designed to obtain quantitative data from students, teachers, and administrators on three aspects of interdisciplinary minor program management: course management, teaching support systems, and student capacity development. It used a five-point Likert scale and was validated by experts for content validity. A pilot test was conducted to ensure reliability before the main distribution.

The focus group meeting was used to collect qualitative data and involved eight participants, including faculty members, administrators, student representatives, and education experts. The structured discussions explored issues and improvement strategies in academic management, providing contextual and validating support for the study findings.

3. Data Analysis:

A combination of quantitative and qualitative approaches was used for data analysis. The questionnaire data were analyzed using descriptive statistics (frequency,

percentage, mean, and standard deviation) to summarize overall trends and variations. The focus group data were analyzed through content analysis, involving systematic coding and categorization to identify key themes and insights, which were integrated with the quantitative findings to form a comprehensive understanding of interdisciplinary minor program management.

Research Results

1. The current situation of interdisciplinary minor programs at Mianyang City College reveals existing problems and corresponding needs. The specific findings are as follows:

Table 1 Problems and needs that teachers and administrator staff encounter in the teaching and management of interdisciplinary minor programs.

Questions	n=76		Level
	$\bar{x}$	S.D.	
Problems			
1. I affirm that the university currently provides adequate academic administrative support for interdisciplinary minor programs, including but not limited to faculty deployment and institutional safeguards.	4.05	1.13	High
2. I maintain that the current policy and institutional framework for interdisciplinary minor programs are both well-designed and effectively implemented.	3.96	1.08	High
3. I contend that the assessment and evaluation mechanisms for interdisciplinary minor programs comprehensively reflect students' competencies.	3.86	1.16	High
4. The faculty teams for interdisciplinary minor programs lack cross-disciplinary collaboration mechanisms, compromising the integration and currency of curriculum content.	3.76	1.25	High
5. I contend that interdisciplinary minor programs have significantly enhanced students' meta-learning competencies in integrating cross-disciplinary knowledge.	3.64	1.16	High
Total	**3.85**	**1.16**	**High**
Needs			
1. I believe that it is necessary to enhance the interdisciplinary minor programs in order to cultivate students' interdisciplinary thinking abilities.	3.87	1.10	High
2. I believe that the interdisciplinary minor programs should be strengthened to enhance students' communication and expression skills.	3.87	1.11	High
3. I believe that it is necessary to incorporate more practical components into interdisciplinary minor programs to enhance students' practical skills.	3.80	1.13	High
4. I think that more resources should be allocated for the teaching of interdisciplinary minor programs (such as laboratories, databases, etc.).	3.78	1.17	High

5. I recommend establishing interdisciplinary faculty collaboration mechanisms (e.g., joint teaching-research activities) to enhance curriculum integration quality.	3.75	1.13	High
Total	**3.81**	**1.13**	**High**

Faculty and administrative staff reported a generally high level of problems in managing interdisciplinary minor programs (overall $\bar{x}$ = 3.85, S.D. = 1.16). The main issues include insufficient academic administrative support, incomplete policy implementation, assessment mechanisms that do not fully reflect student competencies, limited cross-disciplinary faculty collaboration, and a restricted impact on students' meta-learning and interdisciplinary knowledge integration.

Correspondingly, the highest-priority needs focus on enhancing students' interdisciplinary thinking and communication skills ($\bar{x}$= 3.87), increasing practical components to improve practical skills ($\bar{x}$= 3.80), allocating more teaching resources such as laboratories and databases ($\bar{x}$= 3.78), and establishing faculty collaboration mechanisms to improve curriculum integration ($\bar{x}$= 3.75). These findings highlight key areas for improving program management and fostering students' comprehensive capabilities.

Table 2 Problems and needs of Interdisciplinary minor program of students.

Questions	n=296		Level
	$\bar{x}$	S.D.	
Problems			
1. I contend that the absence of a unified academic guidance system in interdisciplinary minor programs has resulted in ambiguous learning pathways.	3.80	1.09	High
2. I think that the assessment method for the interdisciplinary minor program is not scientific enough and it is difficult to comprehensively evaluate my learning outcomes.	3.78	1.13	High
3. I think that the teaching resources for interdisciplinary minor programs are insufficient.	3.75	1.15	High
4. The assessment methods (e.g., examinations) for minor programs fail to capture the essence of interdisciplinary learning, thereby constraining my innovative expression.	3.73	1.24	High
5. The minor program did not help clarify my career direction.	3.62	1.19	High
Total	**3.74**	**1.16**	**High**
Needs			
1. I think that there is a need to enhance the promotion of interdisciplinary minor programs and increase student participation.	3.72	1.14	High
2. I believe that it is necessary to incorporate practical components into interdisciplinary minor programs to enhance students' practical skills.	3.66	1.17	High

3. I believe that the quality of interdisciplinary minor programs needs to be improved and that the teaching abilities of teachers should be enhanced	3.64	1.20	High
4. Need to provide career guidance services related to the minor programs.	3.64	1.19	High
5. I think that the course content of interdisciplinary minor programs needs to be optimized to enhance the connection with the main major.	3.63	1.15	High
Total	**3.66**	**1.17**	**High**

Based on a survey of 296 students, the overall level of problems in interdisciplinary minor programs is high ($\bar{x}$= 3.74, S.D. = 1.16). The most prominent issues reported by students include the lack of a unified academic guidance system leading to unclear learning pathways (Q1, $\bar{x}$= 3.80), assessment methods that are not scientific enough to comprehensively evaluate learning outcomes (Q2, $\bar{x}$= 3.78), insufficient teaching resources (Q3, $\bar{x}$= 3.75), assessment mechanisms that constrain innovative expression (Q4, $\bar{x}$= 3.73), and limited career guidance (Q5, $\bar{x}$= 3.62).

Correspondingly, students' highest-priority needs focus on enhancing program promotion and increasing participation (Q1, $\bar{x}$= 3.72), incorporating practical components to strengthen practical skills (Q2, $\bar{x}$ = 3.66), improving program quality and teaching abilities (Q3, $\bar{x}$= 3.64), providing career guidance services (Q4, $\bar{x}$= 3.64), and optimizing course content to better connect with their major (Q5, $\bar{x}$= 3.63). These findings suggest that students require clearer academic guidance, more practical learning opportunities, improved teaching quality, and stronger career support to enhance their interdisciplinary learning experience.

2. Academic administration approaches for interdisciplinary minor programs at Mianyang City College in China based on the perspective of improving the comprehensive abilities of college students.

2.1 Academic Administration Approaches.

2.1.1 Establish a cross-departmental course coordination mechanism. Coordinate major and minor courses at the university level to minimize scheduling conflicts. Implement a course selection system with a "conflict warning mechanism" to alert students of potential overlaps and provide scheduling optimization suggestions, improving flexibility and effectiveness of course selection.

2.1.2 Implement a dual-mentor system. Assign each student both a major and a minor advisor to provide continuous, personalized guidance on academic planning, course selection, and skill development. Promote comprehensive improvement of interdisciplinary competencies through coordinated mentorship.

2.1.3 Build a shared teaching resources platform. Develop a digital platform to integrate course materials, teaching cases, and exemplary resources for interdisciplinary

minors. Enable centralized resource management, improve access for teachers and students, and optimize allocation and utilization of teaching resources.

2.2 Interdisciplinary Minor Program Design.

2.2.1 Develop Major-Minor Integrated Course Modules. Design project-based tasks that combine knowledge from major and minor disciplines. Encourage practical problem-solving to enhance cross-disciplinary knowledge transfer, innovation, and comprehensive literacy.

2.2.2 Strengthen practical teaching. Ensure at least 30% of courses involve practical components. Introduce case studies, industry projects, and corporate research to enhance student engagement and applied skills.

2.2.3 Promote faculty interdisciplinary collaboration. Establish cross-disciplinary teaching teams for joint lesson preparation, collaborative teaching, and teaching research. Foster curriculum innovation, effective collaboration, and professional development among faculty.

2.3 Enhancing Students' Abilities.

2.3.1 Establish on-campus and off-campus practical learning systems. Use on-campus labs and experimental bases, expand industry internships, and conduct project workshops to enable practical application of theoretical knowledge.

2.3.2 Integrate career guidance into the curriculum. Offer career navigation courses, invite industry experts for lectures, and organize interdisciplinary recruitment events to help students clarify career paths and improve employability.

2.3.3 Implement diversified competency assessments. Adopt a comprehensive assessment system including portfolios, team projects, achievement presentations, and reflective reports.

Evaluate students' growth and interdisciplinary competencies from multiple dimensions, promoting holistic development.

Research Discussion

Through questionnaire surveys and focus group discussions, the research results reveal the prominent challenges of interdisciplinary minor programs in three aspects: curriculum management, teaching management support system and student ability training. These results not only confirm the conclusions of existing studies, but also provide new empirical support for the academic administration of interdisciplinary minor programs in Chinese universities.

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1. Curriculum management challenges.

The study found that time conflicts in interdisciplinary minor courses are more prominent. Most of the teachers reported that there are conflicts between the schedule of minor courses and major courses. Students also generally believe that the course connection is insufficient, resulting in limited knowledge integration. In addition, students hope to increase practical teaching links to make up for the lack of practice orientation. This result is consistent with the study of Zhao (2021), who pointed out that course conflicts and lack of practice not only reduce students' learning enthusiasm, but also affect the course completion rate. This study further illustrates that the lack of holistic curriculum planning and interdisciplinary integration mechanism has become an important factor restricting students' learning experience and ability improvement.

2. Insufficient teaching management support.

In terms of teaching management support, this study found that the most of students lacked systematic academic planning and career development guidance; teachers had limited opportunities for interdisciplinary communication, and interdisciplinary teaching and research collaboration was still insufficient; at the same time, the assessment method was still mainly closed-book written examinations, which made it difficult to comprehensively evaluate students' interdisciplinary qualities. This finding is consistent with the research of Li, Wang, and Chen (2020), and also confirms the view of Panadero, Jonsson, and Botell (2017) that the lack of systematic academic support and diversified assessment mechanisms will weaken the flexibility and effectiveness of interdisciplinary education. This study also pointed out that the imperfection of the teaching support system not only affects students' choice of learning path, but also restricts teachers' professional development and teaching innovation to a certain extent.

3. Insufficient development of students' abilities.

In terms of student ability development, critical thinking and innovation ability were both at a low level, and career development support was insufficient. Only 30% of students believed that the minor courses significantly improved their employment competitiveness; at the same time, although 89% of students recognized the value of digital resources, the actual usage rate was only 37%. This is highly consistent with Zhang's (2022) research and also echoes Zhang, Du anf Ding’s (2015) conclusion that Chinese universities still have significant shortcomings in career development support and educational resource utilization, which require improvement through institutional reform. This study further emphasizes that the lack of systematic capacity-building programs and practical opportunities makes it difficult for students to develop sustainable core competitiveness.

In summary, the results of this study indicate that interdisciplinary minors suffer from systemic deficiencies in curriculum arrangement, teaching support systems, and student capacity development. These issues not only affect student learning outcomes but also restrict the quality of talent development. The results confirm previous theories and hypotheses that interdisciplinary minors require a systematic, practice-oriented, and multi-dimensionally supported academic administration approach to effectively enhance students' comprehensive abilities. Furthermore, compared with relevant domestic and international research, this study highlights the specific difficulties faced by Chinese universities in interdisciplinary minor course management and teaching support systems, providing new empirical evidence for the optimization and localization of academic administration approaches.

In response to the challenges identified in curriculum management, teaching support, and student development, this study proposes a systematic academic administration approach for interdisciplinary minor programs. By introducing course connection standards, intelligent scheduling, cross-college coordination, diversified assessments, and personalized student advising, the proposed approach directly addresses issues such as timetable conflicts, insufficient academic guidance, limited interdisciplinary collaboration, and weak practical ability development. Overall, this framework provides a more coherent, practice-oriented, and student-centered direction for improving the effectiveness of interdisciplinary education in Chinese universities.

Research Body of Knowledge

This study suggests that the academic administration of interdisciplinary minors should be structured as a "three-in-one" system centered around curriculum management, teaching support systems, and student development. Curriculum management should emphasize systematization and a practical orientation; teaching support systems should provide academic guidance, interdisciplinary collaboration, and diversified assessment; and student development should emphasize the integration of critical thinking, innovation, and career orientation, while also strengthening the use of digital resources. These three elements interact to promote the improvement of students' comprehensive abilities, as illustrated in the Figure1.

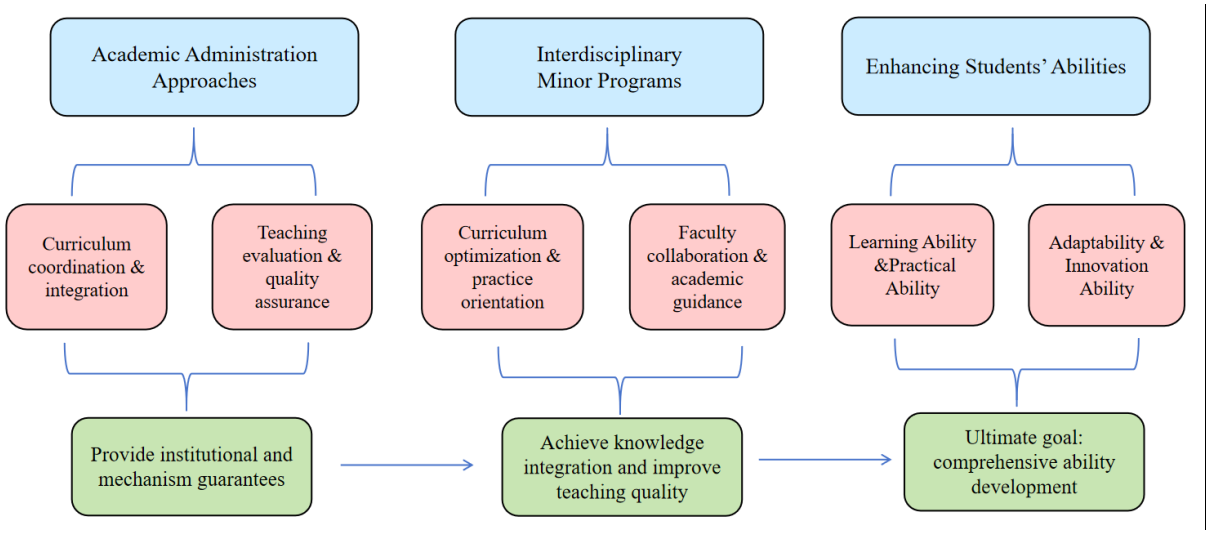

Figure 1 Academic Administration Approaches for Interdisciplinary Minor Programs

This diagram illustrates the three core components of the academic administration system for interdisciplinary minor programs:

1. Academic administration approaches: Implementing institutionalized and intelligent management through the establishment of scientific mechanisms for curriculum coordination, teaching evaluation, and quality assurance.

2. Interdisciplinary Minor Programs: Optimizing curriculum structure, strengthening practical teaching, and building a multidisciplinary faculty team to enhance curriculum coherence and teaching quality.

3. Enhancing students' Abilities: Systematically improving students' comprehensive abilities through the cultivation of critical thinking and innovation, career development support, and digital learning resources.

These components are interconnected, Academic administration approaches provide institutional support for curriculum and capacity development; Interdisciplinary Minors achieve knowledge integration through optimized teaching; and student capacity enhancement is the ultimate goal of management and curriculum optimization.

Research Suggestion

1. Suggestions in practice.

1.1 Academic Administration Approaches. Establish an interdisciplinary education steering committee to strengthen cross-college coordination, manage teaching resources, reduce course conflicts, and enhance academic guidance. Implement an intelligent course scheduling system to provide conflict warnings, optimize scheduling efficiency, and improve management effectiveness. Build a three-tiered quality monitoring

mechanism based on the PDCA cycle to ensure continuous quality improvement and support sustainable academic administration.

1.2 Curriculum and Teaching Development. Develop interdisciplinary course connection standards to ensure structured curriculum integration and coherent learning pathways. Expand practice-oriented and project-based learning to enhance curriculum relevance and promote deep learning. Establish dual-mentor faculty teams, encouraging collaboration between universities and industries to achieve curriculum innovation and strengthen real-world applicability.

1.3 Student Development Support. Provide personalized academic and career guidance to address diverse student needs and promote holistic development. Implement a dual mentor system and create an interdisciplinary practical training platform to improve students' practical skills, innovation capacity, and employability. Integrate digital learning resources and continuous feedback systems to support independent learning and ongoing improvement.

2. Suggestions for research.

2.1 Academic Administration and Intelligent Management. Examine the practical effectiveness of intelligent course scheduling systems in enhancing teaching efficiency and solving course conflicts. Investigate the application of data-driven academic management models and evaluate their impact on student learning outcomes and overall program efficiency.

2.2 Curriculum Standards and Assessment Methods. Develop and validate scientific curriculum articulation standards to support coherent interdisciplinary pathways. Explore diversified assessment methods to measure students' innovation ability, interdisciplinary thinking, and knowledge integration more effectively.

2.3 Student Support and Mentoring Models. Study the effectiveness of personalized mentoring frameworks that integrate big data analytics with academic and career guidance. Assess how such mentoring systems influence students' adaptability, lifelong learning ability, and employability.

2.4 University–Industry Collaboration. Investigate long-term university–enterprise cooperation mechanisms to understand how industry participation supports curriculum design, practical training, and competency development. Evaluate models of industry-integrated interdisciplinary education to enhance the relevance and sustainability of talent cultivation.

2.5 Higher Education Innovation. Explore management models that are more scientific, intelligent, and student-centered, contributing to innovation in interdisciplinary education and improved talent development.

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