

Exploration of the Construction Path for an Audit Virtual Teaching and Research Office Integrating Ideological and Political Elements under the "Three-Dimensional Education" Concept

Jiaqi Hu, Bo Liu*

School of Accountancy, Anhui University of Finance and Economics, Bengbu, Anhui 23330, China

*Corresponding author: acliubo@126.com

Abstract

"Three-dimensional education" is a new requirement proposed for strengthening and improving ideological and political work in higher education in the new era. This concept holds significant guiding value for integrating ideological and political elements into auditing courses. Virtual teaching and research teams serve as grassroots academic organizations in universities and as frontline platforms for discipline and major development. They should actively respond to national calls by organically incorporating the "Three-dimensional education" concept and ideological and political elements. Based on the specific objectives of "Three-dimensional education," this paper analyzes existing issues in ideological and political teaching within auditing courses, explores the construction path of auditing virtual teaching and research teams with integrated ideological and political elements, and aims to provide some reference for related educational and teaching work.

Keywords

Three-dimensional education; Auditing; integration of ideological and political elements; Virtual teaching and research group; Construction path.

1. Introduction

"Three-dimensional education" refers to comprehensive education involving all faculty members, the entire process, and all aspects. With the deep integration of ideological and political education with disciplinary teaching in universities, this concept plays an increasingly important guiding role in practice. The auditing course is closely linked to ideological and political education, and exploring the integration of ideological and political elements into auditing courses is of great significance for further improving teaching quality and talent cultivation standards [1]. This paper aims to explore the construction path of a virtual auditing teaching and research team by integrating ideological and political elements in line with the "three-dimensional education" concept, providing some reference for related teaching and educational work.

2. Related Overview

2.1. The Concept of "Three-dimensional education"

2.1.1. Background of Proposal

In December 2016, President Xi Jinping emphasized at the National Conference on Ideological and Political Work in Universities and Colleges that "ideological and political work should be

integrated throughout the entire educational process, achieving full participation, comprehensive coverage, and all-round nurturing in education."

In February 2017, the State Council issued the "Opinions on Strengthening and Improving Ideological and Political Work in Universities Under the New Situation," designating the principle of fostering comprehensive, whole-process, and all-round education as one of the fundamental guidelines for enhancing ideological and political work in universities. It emphasized integrating ideological and value guidance throughout the entire educational process and all aspects, establishing a long-term mechanism for teaching, research, practice, management, service, cultural, and organizational education.

2.1.2. Conceptual Connotation

The concept of "Three-dimensional Holistic Education" primarily encompasses three aspects. "All-staff education" is a personnel-oriented requirement, meaning that all departments and faculty members in the school share the responsibility of fostering virtue and nurturing talent. "Whole-process education" is a time-oriented requirement, emphasizing that ideological and political education should permeate the entire journey of students' learning and development. "Omni-directional education" is a spatial-oriented requirement, stressing that ideological and political education should manifest in all facets of students' growth.

2.1.3. Significance for the Guidance of Audit Courses

Since the advent of the new era of socialism with Chinese characteristics, cultivating auditing professionals with strong ideological and political awareness and firm ideals and convictions has become increasingly important. Therefore, the training of auditing talent in universities should emphasize both specialized instruction and ideological-political education. This requires not only immediate efforts but also the participation of all faculty members. Guided by the "Three-dimensional education" concept, universities should focus on the objectives of comprehensive, continuous, and all-round education, integrating ideological-political education into every aspect of the curriculum.

2.2. Ideological and Political Integration Model in Auditing Courses

2.2.1. Construction Objectives

The construction objectives of the ideological and political integration model in auditing courses encompass two aspects. One is professional knowledge instruction, and the other is ideological and political education. These two objectives are not isolated but mutually reinforcing and complementary. Incorporating ideological and political elements into disciplinary knowledge teaching helps students enhance their sense of social responsibility, develop correct values, and cultivate firm ideals and convictions. Conversely, students who receive effective ideological and political education will place greater emphasis on mastering professional knowledge and practical skills [2].

2.2.2. Construction Phase

The construction of an ideological and political integration model for auditing courses requires five key steps: setting teaching objectives, identifying ideological and political elements, designing teaching plans, implementing the plans, and evaluating effectiveness. These five steps form a cyclical process that continuously refines itself through iterative assessment and adjustment, gradually aligning with the goal of comprehensive education, ultimately achieving the establishment of this integrated model.

2.3. Virtual Teaching and Research Center

2.3.1. The Concept of Virtual Teaching and Research Office

In the digital era, the application of digital technology in teaching has become increasingly widespread. Many universities leverage information technology to establish shared platforms

and resource libraries, conducting hybrid online and offline teaching and research activities. To facilitate these activities, universities form interdisciplinary, cross-departmental, and cross-institutional teaching and research teams through digital platforms. This grassroots organization within universities is known as a virtual teaching and research team [3].

2.3.2. Functions of Virtual Teaching and Research Teams

R1: "Internet plus" must be translated as "Internet plus" In the internet era, the virtual teaching and research group, an instructional organization based on information technology, has gradually become an important platform for exploring new teaching and research models and improving their quality. Its main functions include bringing teaching and research closer to the latest practices, enriching teaching and research resources and forms, promoting collaboration within and outside the institution, and facilitating the coordinated development of teaching, research, and scientific inquiry.

3. The Practical Value of Establishing a Virtual Teaching and Research Office for Ideological and Political Integration in Auditing

3.1. Meets the inherent requirements of auditing course instruction

Audit is an independent economic supervision activity where auditors, as impartial parties, issue audit opinions on audited matters. Their professional ethics and conduct significantly impact the stability of the economic market and public confidence in it. To ensure objective and independent audit opinions, auditors must possess a strong sense of social responsibility and sound professional ethics. In recent years, there have been frequent instances of auditors losing their ideals and convictions, engaging in illegal activities that violate professional ethics. This severely damages the professional image of auditors and erodes public trust in them. Therefore, starting from school education and incorporating ideological and political elements into teaching through virtual teaching and research teams to foster students' firm ideals and convictions, thereby cultivating outstanding auditing talents, is an inherent requirement and practical necessity for auditing courses.

3.2. Beneficial for improving students' ideological and political level and comprehensive quality

The current social development requires socialist builders with good ideological and moral standards, therefore, the requirements for the ideological and political qualities of talents are becoming increasingly high. By constructing and utilizing a virtual teaching and research room for auditing that integrates ideological and political education, students can receive ideological and political education while learning professional knowledge, which will subtly influence their values and moral qualities. Therefore, this education will become the foundation for students to strictly abide by professional ethics and maintain good professional behavior in the future. By improving the ideological and political level of audit students, stimulating their sense of responsibility for the times, and enhancing their comprehensive quality, it is conducive to promoting their growth into audit talents needed for economic and social development.

3.3. Promote the integration of teaching resources

The virtual teaching and research room is a cross disciplinary and cross school teaching organization that integrates resources at two levels through cross disciplinary collaboration. On the one hand, ideological and political course teachers share resources with professional course teachers, and professional course teachers obtain the ideological and political teaching experience and resources of ideological and political course teachers, enriching the resources and forms of curriculum ideological and political teaching. This is conducive to saving time and energy in exploring ideological and political education in courses, and accelerating the process

of curriculum ideological and political construction. On the other hand, through the platform of virtual teaching and research rooms, schools can share resources and experiences, share successful experiences with each other, and exchange solutions to difficulties encountered, ultimately achieving mutual learning and complementarity among schools.

3.4. Promote cooperation between universities and enterprises

The construction of virtual teaching and research rooms cannot be separated from cooperation with co built universities and enterprises and institutions. With the support of advanced digital technology in virtual teaching and research rooms, schools and enterprises can communicate their learning outcomes on current affairs in real time and develop cooperation intentions. For example, conducting cross school political research activities through online conferences to promote understanding and teaching application of the latest ideological and political hot topics. In addition, it is also possible to emphasize the importance of ideological and political education in professional practice to partner enterprises, and then carry out auditing professional internship practices based on current political hotspots, such as the professional practice with the theme of "Exploring the Role of Auditing in Developing New Quality Productivity".

4. Current Problems in Ideological and Political Education in Auditing Courses

4.1. Cognitive Bias

At present, many teachers do not attach enough importance to the integration of ideological and political elements into curriculum teaching. It is believed that ideological and political education is only an auxiliary part of professional knowledge teaching, so in teaching, ideological and political content explanations are added in individual chapters only to complete tasks. Not realizing that the audit course has a natural ideological and political attribute, integrating ideological and political elements is conducive to enhancing the teaching effectiveness of professional knowledge. Moreover, due to the lack of in-depth exploration of ideological and political elements in audit courses, ideological and political education in the curriculum has become superficial and superficial. Therefore, students find it difficult to arouse interest and attach importance to ideological and political education in such courses, and the ideal effect of moral education has not been achieved.

4.2. Lack of integration of ideological and political education in the curriculum

Currently, perhaps due to limitations in energy and resources, many professional course teachers have a significant lack of ability to integrate ideological and political education into their courses. When teaching, only the ideological and political module was rigidly inserted into the professional content, ignoring the inherent connection between the two, and failing to build a deeply integrated teaching system for ideological and political auditing courses. Resulting in a disconnect between professional teaching and ideological and political education, and the effectiveness of integrating ideological and political education into the curriculum is not ideal. For the teaching method of ideological and political education in such courses, most students regard it as rigid preaching, with one ear in and the other out, unable to connect it with the professional knowledge and skills of auditing.

4.3. Insufficient teaching resources

In order to better serve current education and teaching, the audit course of ideological and political education needs to keep up with the current situation. If the ideological and political education in the curriculum is not updated in a timely manner and outdated course content is taught, it will lead to the problem of education being disconnected from reality and the present.

Therefore, in order to carry out high-quality ideological and political education in courses, the curriculum team needs a large number of teaching resources such as new textbooks and courseware. If these teaching resources are only obtained through internal channels (written and produced by professional course teachers), it will not only be difficult to meet the needs in terms of time and quantity, but also occupy a lot of time and energy of course team members. So, currently many schools have to temporarily use outdated textbooks, which has led to a lack of close connection between ideological and political education in the curriculum and current affairs.

4.4. Single teaching methods

Teaching methods have a significant impact on teaching effectiveness. For the ideological and political education of auditing courses, many teachers still focus on traditional classroom teaching, which not only fails to stimulate students' learning enthusiasm, but also easily makes students feel bored with the course's ideological and political learning. At the same time, with increasingly diverse teaching methods, the use of computers and cloud platforms in teaching has become more and more common. Compared with this, the traditional teaching methods of ideological and political education by some teachers are more monotonous and boring, and how to enrich teaching methods has become an urgent problem to be solved [8].

5. The Construction Path of a Virtual Teaching and Research Room for Auditing that Integrates Ideological and Political Elements

5.1. Based on the current ideological and political reality

The ideological and political education in auditing courses should serve the present and serve reality. To this end, the construction of a virtual teaching and research office for auditing can be focused on the following aspects.

5.1.1. Macro understanding of the latest ideological and political hot topics

Ideological and political education is an education that keeps pace with the times, and should be closely integrated with the latest political hot topics to avoid being divorced from reality. Members of the teaching and research department must actively pay attention to and study the latest national policies seriously. They should make full use of ideological and political learning platforms (such as learning about strong countries) to understand current affairs, regularly organize seminars on the latest policies and learn about the spirit of important central conferences, in order to maintain a macro grasp of the latest ideological and political content.

5.1.2. Integration of ideological and political elements in the curriculum with socialist core values

The socialist core values are the code of conduct for everyone's work, study, and life. To achieve the goal of cultivating morality and nurturing people, it is first necessary to ensure that students establish correct values. Therefore, when exploring the ideological and political elements of the curriculum, the teaching and research department should pay attention to the connection with the socialist core values. For example, audit professional ethics require practitioners to be honest, fair, diligent, and responsible, which coincides with the content of socialist core values.

5.1.3. Deeply explore the connection between ideological and political elements and auditing courses

The audit course is closely related to ideological and political education, and must be fully explored in order to maximize the role of ideological and political education in audit teaching. At the same time, delving into the ideological and political elements of auditing courses can also help overcome the shortcomings of low integration between ideological and political elements

and subject teaching in the past. The teaching and research department should play a leading role in this regard, as shown in Table 1 for some examples.

Table 1. Examples of ideological and political elements that can be explored in the content of auditing courses

Course content	Ideological and political elements
Auditing, Assurance, and Certified Public Accountant Professions	Socialist core values and social responsibility
Audit procedures and techniques	Craftsmanship spirit, integrity, and dedication spirit
Transaction cycle audit	Bottom line awareness, patriotism, and rule of law awareness
Other types of authentication services and related services	Social responsibility, national confidence, cultural confidence

5.2. Guided by the overall goal of "Three-Dimensional Education", reconstruct the curriculum teaching system and content

To achieve the overall goal of the "Three-Dimensional Education" concept and integrate ideological and political work throughout education, it is necessary to build a new teaching system that deeply integrates ideological and political elements. The specific methods are as follows.

5.2.1. Integrating ideological and political elements into curriculum materials

Many existing audit course textbooks, both in form and content, are no longer able to meet the constantly evolving needs of ideological and political education in audit studies. Therefore, the teaching and research department should leverage its technological advantages, utilize online and offline resources, and develop audit textbooks that are diverse in form and deeply integrate ideological and political elements. These textbooks include both physical textbooks and electronic courseware, online courses, learning platforms, etc.

5.2.2. Integration of ideological and political elements with audit objectives and professional ethics education

The auditing discipline naturally has ideological and political attributes. General Secretary Xi Jinping clearly pointed out that "auditing is an important component of the Party and state supervision system." The teaching of auditing, especially auditing objectives and professional ethics education, is closely related to ideological and political goals and needs to be given special attention in teaching. The teaching and research department should utilize online resources to strengthen education on relevant content. Partial examples are shown in Table 2.

Table 2. Examples of professional ethics and ideological and political elements, as well as the integration of ideological and political education

Professional ethics	Ideological and political elements	Teaching approach
Integrity, independence, objectivity and fairness	Social responsibility and legal awareness	Audit 'Eight Prohibitions' Regulations
Professional competence	Craftsmanship spirit, self-improvement	Audit Project of Hongkan Sewage Treatment Plant
Due diligence	Ideal beliefs and patriotism	Short video 'Audit Stories in Party History'

5.2.3. Combining ideological and political elements with case teaching

Case teaching is an important part of auditing courses, and attention should be paid to its integration with ideological and political elements. The teaching and research department should promote the optimization of case teaching. When designing case teaching, professional knowledge should be considered, and ideological and political value should be taken into account. For example, typical cases such as Zhangzidao inventory fraud and Kangmei Pharmaceutical inflating monetary funds should not only emphasize their implications for audit work, but also their implications at the ideological and political level. From the perspective of ideological and political education, the parties involved in these cases did not establish correct values, firm ideals and beliefs, and had weak awareness of the rule of law, which should be taken as a warning.

5.3. Building a high-level teacher team and anchoring the goal of educating all staff

All staff education means that ideological and political education is not only the responsibility of ideological and political course teachers, but also involves all faculty members, including professional course teachers and management personnel. The virtual teaching and research room can achieve this goal through the following efforts.

5.3.1. Enhance teachers' understanding of ideological and political education in the curriculum

At present, many professional course teachers have a biased understanding of ideological and political education, believing that the content of ideological and political courses is not as important as professional knowledge. The teaching and research department should play a leading role in the discipline and improve the ideological and political level of the teaching staff at the cognitive level.

Firstly, it is necessary to understand the importance that teachers attach to ideological and political elements, and to provide targeted solutions for situations where some teachers do not pay enough attention. For example, the head of the teaching and research department communicates to understand their ideas and answers questions to correct cognitive biases. Secondly, regular teaching and research meetings should be held to repeatedly emphasize the importance of ideological and political education in the curriculum. Finally, supervision and assessment of teachers' ideological and political teaching should be implemented.

5.3.2. Building a cross disciplinary teaching team

One major advantage of virtual teaching and research rooms is the leapfrog integration of information technology, which should be fully utilized in teacher team building. In the process of building a teaching team, in order to obtain richer ideological and political education resources and experience, the teaching and research department should recruit full-time teachers of ideological and political courses as members. On the one hand, ideological and political teachers can provide high-quality ideological and political education resources for professional course teachers. On the other hand, having ideological and political teachers evaluate the audit course's ideological and political teaching plan can help improve the integration of ideological and political education in the curriculum by imparting teaching experience to professional teachers.

5.3.3. Improve the ideological and political level of teaching staff

The ideological and political level of the teaching staff will greatly affect the quality of ideological and political education in the curriculum. Therefore, it is necessary to utilize the resources of the teaching and research department (such as ideological and political learning platforms, cross school ideological and political exchange platforms, etc.) to regularly carry out learning activities on political theory and current affairs for teaching teachers. At the same time,

timely organize teachers to conduct ideological and political level tests to ensure that members of the teaching and research department have a correct understanding of ideological and political education.

5.3.4. Strengthen the construction of teacher ethics and style

Teachers should lead by example and set a good example for students in terms of ideological and political education. Virtual teaching and research rooms are the forefront of subject teaching and research, and should strengthen the construction of teacher ethics and style. On the one hand, regular ideological and political assessments should be conducted on members to ensure their correct political awareness and prevent academic misconduct. On the other hand, it is necessary to regularly evaluate and assess the teacher's ethics and style through teaching assessments, and to reward and punish excellence.

5.3.5. Regularly conduct exchanges and discussions on ideological and political themes among teaching staff

If the teaching teacher works alone in the ideological and political work of the curriculum, it is often difficult to achieve ideal results. Through communication, discussion, and mutual learning, it is beneficial to improve the level of ideological and political education in each individual's curriculum. To this end, virtual teaching and research rooms should be built as a platform for teachers to exchange and solve problems in ideological and political education in courses, and share experiences. The teaching and research department should regularly hold teaching exchange activities with the theme of ideological and political education in auditing courses, calling on all teaching teachers to participate, share experiences, learn from each other's strengths and weaknesses, and improve their level.

5.4. Fully utilize advanced teaching methods and strive to achieve full process education

To achieve full process education, ideological and political education in the curriculum cannot only exist in the classroom teaching process. We should actively utilize advanced teaching tools and methods to enable students to benefit from ideological and political education even after school and on vacation.

5.4.1. Integrate online ideological and political education resources

There are rich ideological and political education resources on the Internet, and the teaching and research office has the advantage of information technology. It should fully integrate and use Internet resources to enable students to receive ideological and political education outside the classroom. For example, the teaching and research office can establish and operate teaching websites, official account, and regularly push relevant films and short videos on the integration of ideological and political science and auditing disciplines. At the same time, existing learning platforms (such as Study Strong Country) can be fully utilized to provide ideological and political education and assessment to students in their spare time.

5.4.2. To carry out ideological and political education in courses

At present, advanced technologies such as big data and artificial intelligence have been widely applied in the field of education and have shown significant advantages. The virtual teaching and research room has advanced information technology and should play a leading role in this area, actively applying new technologies in ideological and political education courses, and testing the results. For example, big data technology can be used to collect current political buzzwords related to auditing, or artificial intelligence can be used to analyze students' ideological and political homework and evaluate learning outcomes.

5.4.3. Enriching the Forms of Ideological and Political Education

To solve the problem of a single form of ideological and political education, virtual teaching and research rooms should actively explore new teaching forms through laboratories and online teaching platforms. This will help stimulate students' interest in learning and improve teaching effectiveness. For example, simulating audit ideological and political practice scenarios in the laboratory, allowing students to deeply participate. In addition, online teaching platforms can integrate education with entertainment through new teaching methods such as short videos and interactive classrooms that students enjoy.

5.4.4. Building an on campus laboratory that integrates ideological and political elements with professional knowledge

The laboratory is an important scene for the work of the teaching and research department, and also an important aspect of the construction of the teaching and research department. On the one hand, we need to improve the level of laboratory facilities; On the other hand, it is also important to incorporate ideological and political elements into it. For example, poste propaganda posters for ideological and political education, installing ideological and political learning software on computers, etc. Regularly organize students to practice and learn in the laboratory, so that they can be influenced unconsciously.

5.5. Promote the integration of ideological and political education with practice, and implement the goal of all-round education

To achieve the goal of all-round education, ideological and political education cannot be limited to the classroom. Virtual teaching and research rooms should promote the role of ideological and political elements in practice.

5.5.1. Exploring the combination of ideological and political elements with practical teaching

Virtual teaching and research rooms can integrate ideological and political elements into professional courses through practical teaching. To this end, teachers can reform teaching methods in experimental teaching, promote problem-based, project-based, and case-based teaching methods, fully tap into the ideological and political education elements contained in experimental scenarios, and let students feel the charm of ideological and political elements in practice. For example, teachers can incorporate teaching content into experimental courses to guide students to pay attention to the ideological and political elements contained in the experiments, such as teamwork, honesty and trustworthiness, and excellence. In addition, social practice during winter and summer vacations can be used as a starting point to effectively combine practical teaching of auditing courses with summer social practice activities. By delving into accounting firms, auditing agencies, and internal audit departments, ideological and political education resources in auditing practice can be explored, allowing students to care about society, understand the industry, and become familiar with the profession, thereby increasing their profound learning experience.

5.5.2. Conduct subject competition guidance with current political hotspots as the entry point

Guiding subject competitions is an important teaching and research module of virtual teaching and research rooms, as well as an important link in testing teaching effectiveness. At present, many discipline competitions are emphasizing the importance of ideological and political education. For example, the "Challenge Cup" and "Internet" competitions have special red tracks. Therefore, when relying on the teaching and research department for subject competition guidance, students should be guided to integrate ideological and political hot topics into their entries. For example, when guiding students to write project proposals, they

can closely integrate the background and application prospects of the project with current political hot topics such as rural revitalization and the development of new quality productivity.

5.5.3. Update talent training plans in real-time according to the latest ideological and political education needs

With the rapid development of technology, society's requirements for talent quality are constantly changing. Therefore, the talent training program of universities should be continuously updated. Virtual teaching and research rooms are grassroots teaching organizations and frontiers in subject exploration. They should actively participate in the formulation and revision of training programs under the guidance of ideological and political goals. For example, in the current era of rapid development of artificial intelligence technology, in response to the call of the country to develop new quality productivity, the teaching and research department should promote the addition of courses combining artificial intelligence and auditing work in the training program, so as to enable students to timely master the AI technology needed for professional practice.

6. Conclusion

Under the concept of "Three-Dimensional Education", ideological and political education in courses is an important component of teaching activities, which needs to be carefully designed and implemented throughout the entire process of professional course teaching. Colleges and universities should firmly grasp the foundation of cultivating students' moral character and soul, closely focus on implementing the fundamental task of cultivating students' moral character, and accelerate the construction of professional courses that integrate ideological and political education under the guidance of the "Three-Dimensional Education" concept. The nature of the auditing course determines the important significance of integrating ideological and political education into it. By implementing teaching design, integrating ideological and political education with theoretical course content can promote the reform of auditing course teaching, deepen the effectiveness of ideological and political education, and further play the role of professional courses in cultivating morality and talents. In order to implement the concept of "Three-Dimensional Education", the virtual teaching and research office of auditing should fully play the role of grassroots teaching and cutting-edge exploration, adhere to the principle of cultivating morality and talents, based on the content of auditing courses and the reality of ideological and political education, anchor talent training goals, and make efforts from the aspects of teaching system, teaching team, teaching methods, practical activities, etc., deeply integrate professional knowledge and ideological and political elements, improve the teaching quality of auditing courses, and cultivate auditing talents needed for economic and social development.

Acknowledgments

This work is supported by Key Teaching and Research Project of Anhui Provincial Department of Education, Research on Teaching Reform and Innovation of Audit Major Based on Cloud Computing under the Background of "New Management" Strategy (2021jyxm0003); Anhui University of Finance and Economics Teaching Quality Engineering Project, Audit Virtual Teaching and Research Room (acxnjys2022004); Anhui University of Finance and Economics Teaching Quality Engineering Project, Internal Control and Risk Management Teaching Team (acjxtd2022003).

Author's Profile

Jiaqi Hu (2001-), female, from Huaibei, Anhui Province, is a 2024 graduate student majoring in accounting at Anhui University of Finance and Economics, mainly engaged in financial and accounting research.

Bo Liu (1973-), male, from Xiaoxian County, Anhui Province, holds a Ph.D. and is a professor and master's supervisor at the School of Accounting, Anhui University of Finance and Economics. He mainly engages in research on capital market finance and auditing.

References

- [1] Li Jing. The connotation characteristics and construction strategies of virtual teaching and research rooms in universities in the digital age [J]. *Education and Teaching Research*, 2025, 39 (01): 13-23.
- [2] Liu Xiaoyu, Zhang Yanwei, Li Gaojian, etc. The value, dilemma, and path of conducting intelligent teaching and research based on virtual teaching and research rooms [J]. *Teaching and Management*, 2025, (01):29-33.
- [3] Zhao Haixia, Xie Tian, Zhang Yongtao, etc. Research on Innovative Integration of Professional Courses Based on Virtual Teaching and Research Room [J]. *Education and Teaching Forum*, 2024, (46):129-132.
- [4] Li Xue, Zhang Jiaqiong. The connotation, challenges, and promotion path of the construction of virtual teaching and research rooms in universities [J]. *Educational Theory and Practice*, 2024, 44 (33): 9-13.
- [5] Dunrong Bie. The Function and Construction Path of Virtual Teaching and Research Room [J]. *China Higher Education Research*, 2024, (04):7-14.
- [6] Zheng Rui, Zhang Yanyun, Dong Qin. Challenges and Countermeasures of Virtual Teaching and Research Room Construction in Higher Education under the Background of Digital Education [J]. *Journal of Xichang University (Natural Science Edition)*, 2024, 38 (04): 95-104.
- [7] And Xifang. Exploration of the Construction Path of Virtual Teaching and Research Room for Financial Management Major Based on Big Data Background [J]. *China Science and Technology Investment*, 2024, (30):80-82.
- [8] Wu Xiaobei. High quality construction and development of grassroots teaching organizations in universities: taking famous teacher studios and virtual teaching and research rooms as examples [J]. *Journal of Nanjing University of Science and Technology (Social Sciences Edition)*, 2023, 36 (04): 16-21.
- [9] Zhang Shuangzhi. Virtual Teaching and Research Room: Collaborative Production of Teaching and Research Knowledge in the Digital Age [J]. *Heilongjiang Higher Education Research*, 2023, 41 (07): 155-160.
- [10] Chen Jing, Xie Changfa. The Logical Framework and Promotion Path of Virtual Teaching and Research Room Construction under Digital Transformation [J]. *Research on Electronic Education*, 2023, 44 (06): 54-59+73.