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Innovation of Talent Cultivation System of Education Disciplines in Comprehensive Universities in the Context of New Liberal Arts Construction

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Abstract

Under the New Liberal Arts initiative, comprehensive universities' education disciplines face a dilemma: talent cultivation systems lag behind societal demands, showing insufficient interdisciplinary integration and a theory-practice disconnect. This paper, backed by educational engineering theory and centered on training "educational engineers" via the"Applied Educational Studies" major, presents five innovation paths. They are aimed at producing top-notch talents matching the times' needs and boosting the education field's ongoing progress and innovation.

Keywords: new liberal arts, comprehensive university, education disciplines, talent cultivation system, educational engineering

1. Introduction

In 2018, to advance higher education reform and enhance the quality of talent cultivation, China's Ministry of Education issued a series of key policy documents, including the Opinions on Accelerating the Development of High-Quality Undergraduate Education and Comprehensively Improving Talent Cultivation Capabilities. This marked the formal launch of "Six Excellence and One Top-notch Program 2.0" (namely, Excellence Initiatives in Key Fields plus Top-notch Talent Cultivation). The program provides a detailed and comprehensive plan for improving talent training quality across multiple critical disciplines, including arts, sciences, engineering, agriculture, medicine, and education. Released in 2020, the Declaration on the Development of New Liberal Arts outlines a comprehensive strategy for advancing emerging liberal arts disciplines. Centered on the core objectives of elevating talent cultivation quality and revitalizing undergraduate education across China, this initiative aims to cultivate high-caliber humanities specialists equipped with innovative thinking, global perspectives, and social responsibility. By aligning with contemporary societal needs, it seeks to inject renewed momentum into driving social progress and cultural prosperity. Currently, the traditional talent cultivation system within education disciplines at comprehensive universities struggles to fully meet evolving societal demands and fundamental market requirements. Consequently, these institutions must align with contemporary trends and strategically undertake optimization and upgrading of their talent training frameworks. This transformation is essential to address new expectations of our era, ultimately establishing a high-quality cultivation system consistent with the vision of the New Liberal Arts Initiative.

2. Theoretical Analysis of the Construction of New Liberal Arts and Talent Cultivation of Education Disciplines

2.1 Connotation and Characteristics of New Liberal Arts Construction

'Narrow liberal arts' refers to humanities such as literature, history and philosophy, and 'broad liberal arts' refers to 'humanities and social sciences' (or philosophy and social sciences), that is, the general term of humanities and social sciences(Li,2020). The so-called new liberal arts are relative to the traditional liberal arts. Traditional liberal arts focus on the teaching and learning of knowledge within a single discipline, and the boundaries of disciplines are clearer, reflecting the independent development of each discipline. The new liberal arts is developed on the basis of inheriting and transcending the traditional liberal arts. The New Liberal Arts prioritize dismantling disciplinary silos and fostering interdisciplinary integration, significantly advancing convergence between humanities-sciences, humanities-engineering, and humanities-agriculture. Simultaneously, they strategically incorporate emerging technologies like artificial

intelligence and big data into humanities education. This dual approach better aligns talent development with evolving market needs while driving the transformation of traditional liberal arts from specialized models toward cross-disciplinary paradigms.

Compared with traditional liberal arts, the "new" characteristics of new liberal arts are mainly reflected in the following aspects: First, being strategic. The cultivation of talents in the new liberal arts should stand on a strategic height, take the cultivation of the new man of the times as the main task, strengthen the value leadership, and serve the comprehensive deepening reform at the national level(An & Wang, 2019). Second, being integrated. New Liberal Arts emphasizes the cross-fertilization of disciplines. This cross-fertilization is not just a simple superposition of knowledge between disciplines, but the formation of a completely new knowledge system and research paradigm through the deep integration of theories, methods and research perspectives of different disciplines(Xia, 2019). Thirdly, being epochal. New Liberal Arts closely fits the needs of the current social development and actively responds to the challenges of the times.

2.2 New Positioning of Educational Discipline Talent Cultivation in the Perspective of New Liberal Arts Construction

Within the New Liberal Arts framework, interdisciplinary competence has emerged as a cornerstone of student development. This requires students to transcend traditional disciplinary boundaries and synthesize knowledge, methodologies, and cognitive approaches from diverse fields—essential capabilities for addressing complex societal challenges (Li & Sun, 2024). Driven by national initiatives actively promoting cross-disciplinary integration, cultivating versatile humanities specialists has thus become critically significant. This kind of compound liberal arts talents should not only have correct and positive values but also need to build a comprehensive knowledge system. Specifically, they should not only have profound knowledge reserves and exquisite professional skills in a certain specialized field but also have extensive exposure to other disciplines and master interdisciplinary knowledge and skills. This is not only an inevitable choice in line with the trend of the times, but also the key to promoting the high-quality development of liberal arts education. Given the strategic, integrative and epochal characteristics of the construction of new liberal arts, the discipline of education must proactively change the existing talent cultivation mode, timely adjust the mind of talent cultivation, and deeply explore and build a brand-new talent cultivation system. Through these initiatives, the education sector can achieve strategic optimization of talent cultivation systems while consistently producing versatile specialists with integrated arts-sciences perspectives who meet evolving societal demands. Furthermore, New Liberal Arts construction prioritizes interdisciplinary synthesis to dismantle traditional disciplinary barriers, thereby accommodating the diversified development needs of contemporary society. Ultimately, such application-oriented talents—equipped to transform theoretical knowledge into practical solutions and demonstrate real-world problem-solving competence—epitomize the core objectives of the New Liberal Arts paradigm.

The core mission of New Liberal Arts construction is to cultivate forward-looking talent attuned to contemporary demands. Its advocacy for versatile, application-oriented specialists directly aligns with Shanxi University Professor Qingchang Liu's concept of the "educational engineer"—a professional who applies educational theories to real-world contexts, designs practical solutions, and answers the question of "what should be done in education" (Liu, 2016). He observes that the knowledge and skills required of educational engineers are defined by their professional role. As intermediaries bridging educational theory and practice, they specialize in translating theoretical insights into practical applications.(Liu, 2016) Thus, developing educational engineers constitutes a fundamental implementation of New Liberal Arts principles. These professionals employ systems thinking and leverage advanced technologies (big data, artificial intelligence, cloud computing) to precisely analyze educational content, optimize pedagogical approaches, and innovate instructional models. This approach powerfully advances education toward digital intelligence while demonstrating the unique advantages of disciplinary integration. Educational engineers share the fundamental engineering mindset common to all engineering disciplines.(Liu, 2016) Their uniqueness lies solely in the inherent flexibility this mindset exhibits when applied to educational contexts—a natural adaptation to the complexities of education. At its core, however, it remains fundamentally the same engineering approach.(Liu, 2016) Simultaneously, educational engineers require robust theoretical grounding to effectively bridge education theory with practice. They must identify and resolve practical educational challenges with precision, thereby enhancing educational quality and efficacy. Cultivating such professionals holds pivotal importance in closing the theory-practice divide, addressing society's demand for quality education, and driving continuous innovation in the field. Through educational engineers, the New Liberal Arts initiative has established an operational pathway for talent development, injecting renewed momentum into education discipline advancement. The specific operation idea is shown in Figure 1.

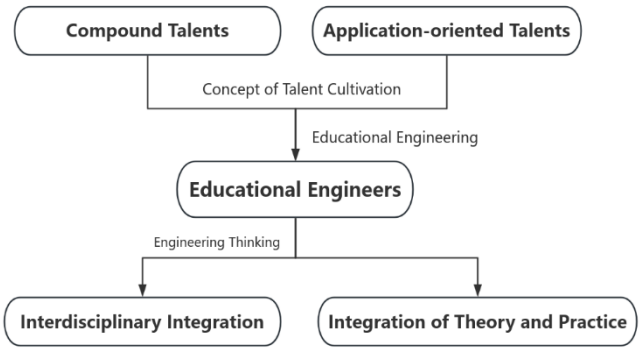

Figure 1. Framework for the transformation of talent cultivation in the context of the new liberal arts

Cultivating educational engineers fundamentally requires deep engagement with educational engineering—a field that integrates pedagogical and engineering knowledge through systemic thinking to solve complex problems. This discipline emphasizes bidirectional theory-practice interaction to bridge their traditional divide, leveraging multidisciplinary methodologies to transform abstract concepts into actionable solutions. These concepts are closely related to the interdisciplinary cross-fertilization and integration of theory and practice advocated in the context of the new liberal arts. The elaboration and construction of the idea system of "educational engineering" has become the theoretical support for the innovation of talent cultivation system of education disciplines in comprehensive universities under the background of the construction of "new liberal arts". Therefore, the author will follow the pulse of the times, based on the macro background of the construction of the new liberal arts, and with the theoretical support of educational engineering, deeply explore the innovation strategy of the talent cultivation system of education disciplines in comprehensive universities. Before proposing a specific innovation path, it is necessary to carry out a comprehensive analysis of the existing talent cultivation system, accurately grasp the defects and deficiencies in the cultivation of educational engineers, and then put forward targeted and feasible talent cultivation innovation initiatives.

3. Problems and Dilemmas of Educational Discipline Talent Cultivation in Comprehensive Universities

3.1 Insufficient Interdisciplinary Integration

Under the traditional education model, the single way of cultivating talents is relatively rigid, not only failing to fully take into account the rapid changes in society and the wide application of science and technology, but also ignoring the trend of blurring professional barriers and disciplinary boundaries(Wang & Lu, 2023). This rigid talent cultivation mode leads to a lack of effective communication and cooperation between different specialties, which is not conducive to the cultivation of compound talents. An in-depth study of the curriculum system of educational disciplines in comprehensive universities reveals that the phenomenon of focusing on the transfer of knowledge within the disciplinary specialties exists in most colleges and universities. There are clear boundaries between disciplines, and there is a lack of effective communication and cooperation mechanisms between education and other disciplines. This situation makes it difficult for students to carry out comprehensive cross-field learning as they are confined to relatively closed areas of specialization. In addition, some college teachers lack interdisciplinary teaching consciousness, long-term in the "closed" research and learning state, and difficulty in breaking through disciplinary barriers. Such limitations profoundly undermine teachers' professional growth, leading to a critical deficit of interdisciplinary faculty. This systemic deficiency not only hinders students' cross-disciplinary learning capacities but ultimately exposes the inherent flaws of conventional pedagogical frameworks in educator cultivation.

The intersection of disciplines under the concept of new liberal arts has an urgent need for compound faculty. However, the current teacher training and introduction system of comprehensive universities has hindered the development of interdisciplinary talents to a certain extent. In the recruitment of teachers, the conditions are often limited to a single disciplinary background, and even require the unification of majors in bachelor's and master's degrees, which makes it difficult for teachers with interdisciplinary backgrounds to gain access. In terms of teacher training, there is a problem of insufficient training and development opportunities for interdisciplinary ability improvement. Moreover, the promotion of teachers is mainly based on the academic achievements of a single discipline, which greatly restricts the improvement of teachers' ability to carry out interdisciplinary research and teaching. At the level of student cultivation and management system, the major setting and cultivation program of comprehensive universities are relatively solidified, which leads to many restrictions on students in choosing courses and changing majors across disciplines. At the same time, the construction of discipline-centered faculties and departments solidifies the identity of disciplines and strengthens the closure between faculties and departments (Zhu & Hao, 2023). This is very unfavorable to the development of interdisciplinary research and teaching. In addition, there is a lack of effective platforms and

mechanisms at the university level to promote exchanges and cooperation between education and engineering disciplines. Most of the teachers in education disciplines are well-versed in education theories, but they have limited knowledge of engineering technologies, which makes it difficult for them to carry out cross-disciplinary research and practical activities.

3.2 Disconnecting Theory from Practice

Under the long-term influence of traditional educational concepts, the educational disciplines of comprehensive universities have formed an inherent model in which theoretical teaching and practical teaching are independent of each other. This concept has a profound impact on the whole process of talent training. It makes theoretical courses occupy a large proportion in the whole curriculum system, while practical courses are not only relatively small in number, but also lack of systematic. The problem of serious disconnection between theory and practice is becoming increasingly prominent. From the perspective of curriculum, theoretical courses tend to focus on the teaching of knowledge and the construction of theoretical systems, focusing on cultivating students' understanding and mastery of the basic principles of education, history of education and other contents. However, the lack of practical courses makes it difficult for students to effectively transform these theoretical knowledge into practical operation ability. It leads to the inability to achieve efficient integration of educational theory and practice, which is not conducive to the cultivation and development of educational engineers. Although colleges and universities have gradually realized the importance of combining theory and practice, and have arranged practical activities such as educational apprenticeships and educational internships during students' study periods. It is hoped that students will be able to apply the theoretical knowledge they have learned to practical teaching situations, but the actual results are not satisfactory. This is mainly due to the gradual marginalization of education disciplines in comprehensive universities, the schools pay little attention to them, and there is a clear lack of investment in resources and allocation of energy in the practice of education disciplines. As a result, the education discipline in comprehensive universities has failed to build a systematic and perfect practice system framework. The lack of systematic practice system makes it difficult for students to obtain comprehensive and in-depth exercise in the process of practice. Therefore, it is impossible to truly master the skills and methods of educational practice, and it is difficult to cultivate the ability to solve practical problems. This status quo of talent cultivation, in which detachment of theory from practice is spotted, not only restricts the development of students, but also affects the overall quality and social acceptance of education disciplines in comprehensive universities. And thus it is in urgent need of reform and improvement.

4. Innovative Approaches to Talent Cultivation System in Education Disciplines at Comprehensive Universities: Pathways Under New Liberal Arts Construction

Amidst the New Liberal Arts initiative, this study addresses the growing demand for educational engineers. Drawing on the practical case study of "Applied Educational Studies" at a selected university, it systematically proposes a framework for developing talent cultivation systems in education disciplines at comprehensive universities.

Guided by Educational Engineering theory, the selected university has undertaken professional transformation since its 2009 undergraduate program.* The transformation established an "Applied Educational Studies" major, exploring multidimensional cultivation pathways for educational engineers through educational design, guidance, monitoring, and innovation. The curriculum features dual tracks aligned with educational objectives, implementing a "foundational reinforcement in lower grades → specialized in upper grades" model. Key features include:

- **Dual Track Curriculum Structure:**

  -Theoretical Track: Courses include *Introduction to Education* and *Research Methods in Educational History*

  -Practical Track: Courses comprise *Teaching Techniques and Artistry* and *Instructional Design and Implementation*

- **Progressive Training Model**

  - Foundational knowledge consolidation in lower grades

  - Specialized track selection (theoretical/practical) in upper grades

- **Differentiated Practical Training**

  - **Theoretical track:** Practice-oriented positions requiring knowledge application

*This practical case study originates from the New Liberal Arts education reform and practice initiative titled "Construction of an 'Applied Pedagogy' Undergraduate Program for Cultivating Educational Engineer-type Talents".

- **Practical track:** Teaching/educational management roles

- **Specialized Academic Outcomes**
  - Track-aligned thesis topics
  - Faculty assigned to specialized courses according to research expertise
  - Implementation of innovative teaching methodologies

This reform has demonstrated significant effectiveness, with graduates achieving outstanding outcomes in both further education and employment. These outcomes provide critical empirical evidence for our study. Building on this successful case study, this paper focuses on the educational engineer cultivation objectives, conducting systematic exploration across five core dimensions: cultivation model, curriculum architecture, pedagogical innovation, internship-practice integration, and instructional resource optimization. The implementation framework is detailed in Figure 2.

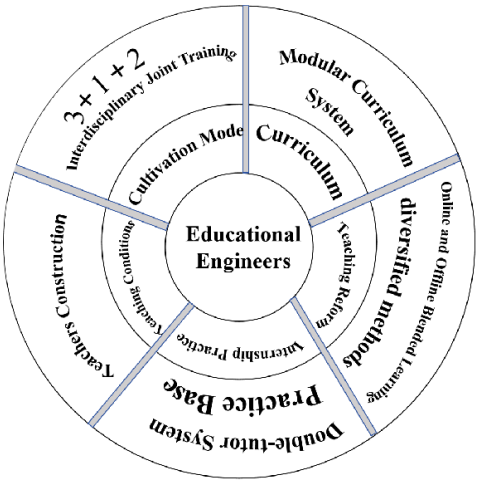

Figure 2. The frame diagram of talent training system of education discipline in comprehensive university

4.1 Innovative Pathways for Integrated Undergraduate and Graduate Programs and Interdisciplinary Integration

Comprehensive universities should pioneer innovative talent cultivation through a "3+1+2" integrated baccalaureate-master's model. The first three undergraduate years establish disciplinary foundations through systematic theoretical training, ensuring mastery of core knowledge frameworks. Year four transitions to immersive field practicums, facilitating knowledge transfer to authentic educational contexts while developing complex problem-solving competencies. The master's phase then deepens specialized theoretical inquiry and expands practical applications, achieving spiral progression in scholarly capability and professional proficiency—collectively forming a logically sequenced, tiered quality assurance system. Concurrently, interdisciplinary joint cultivation mechanisms should be implemented via university-college resource integration, establishing dual-degree/minor pathways where education majors concurrently pursue secondary disciplines. This structural curriculum design dismantles disciplinary barriers while systematically cultivating cross-boundary integration capacities, ultimately forging an innovative ecosystem for developing interdisciplinary-ready professionals.

4.2 Innovative Pathways for a Diverse Modular Curriculum System

Within the curriculum framework, a Modular Curriculum System has been established, comprising four core components: General Education Modules, Specialized Education Modules (including Professional Basic Education and Professional Core Education), Practical Training Modules, and Elective Extension Modules. The General Education Modules span humanities, social sciences, and natural sciences to establish a cross-disciplinary framework that actively promotes interdisciplinary integration and mutual permeation. By integrating resources across arts, sciences, engineering, agriculture, and medicine, this framework enables the development of diverse cross-curricular modules and the construction of a systematic cross-curricular system. Simultaneously, these modules strengthen digital literacy through dedicated courses, actively promoting the deep integration of education and digital technology and continuously refining the digital curriculum system. Specific courses offered include Data Mining and Educational Data Analysis, Online Education Platform Operation, and Applications and Learning Methodologies based on DeepSeek and other AI technologies, designed to enhance students' ability to utilize digital technology for educational research, ensure

the smooth operation of educational processes, and innovate educational implementation pathways, thereby contributing to educational system reform and innovation and advancing the goals of new liberal arts development. The Specialized Education Modules consist of Professional Basic Education and Professional Core Education: the former provides foundational courses such as Principles of Education and History of Education to solidify students' knowledge base and lay a robust groundwork for advanced study, while the latter emphasizes specialized courses like Educational Engineering, cultivating students' core professional competencies. Education disciplines within comprehensive universities are tasked with meticulously constructing core course clusters and deeply optimizing their content, forming a novel curriculum structure where basic courses serve as the cornerstone and core courses provide the primary support. The Practical Training Modules incorporate components such as educational apprenticeship, educational internship, and capstone projects (e.g., thesis design), enabling students to apply acquired theoretical knowledge and methodologies within authentic educational settings and effectively enhancing their ability to integrate theory with practice. The Elective Extension Modules offer students diverse course options for autonomous selection based on individual interests and practical needs. This integrated system ultimately aims to cultivate new liberal arts education professionals distinguished by a solid professional foundation and innovative thinking capabilities.

4.3 Innovative Pathways for Combining Diversity and Hybrid Approaches

In advancing teaching reform, it is essential to transcend conventional pedagogical approaches. First, diverse methodologies—such as project-based learning, flipped classrooms, and case-based instruction—should be adopted to establish student-centered pedagogy as the core principle while emphasizing practical application. Second, a hybrid learning model must be implemented. Central to this approach is the deconstruction of knowledge architectures and reconstruction of learning frameworks. By reorganizing course resources beyond textbook structures, educators can curate online materials—including videos, presentations, exercises, documentaries, and images—alongside structured discussion topics. Consequently, such integration bridges gaps in practical relevance and applicability, ultimately enhancing students' competence in translating educational theory into practice.

4.4 Innovative Pathways for Diversified Practical Education

To cultivate the practical competencies of educational engineers, higher education institutions must diversify internship bases beyond traditional K-12 school settings. Achieving this requires strengthening enterprise collaborations through formal agreements to establish enterprise training bases, and forging partnerships with educational research institutes and training organizations to address the skills gap between graduate capabilities and industry demands. Diverse cooperation models—such as co-constructed training bases, joint practical projects, and industry-university-research integration—can provide diversified experiential opportunities, broaden student perspectives, and foster mutually beneficial partnerships. Given the critical role of practice instructors, universities must enhance the practical guidance capabilities of faculty through industry immersion programs that keep teachers abreast of industry developments, and establish scientific evaluation and incentive systems to drive continuous improvement in their guidance practices. Furthermore, comprehensive universities should implement dual-tutor systems by appointing industry professionals as adjunct instructors and leveraging their expertise to deliver applied mentorship.

4.5 Innovative Pathways for Faculty Development

Developing interdisciplinary teaching capacity requires breaking down disciplinary barriers and establishing a dynamic, collaborative growth system. Centered on cultivating versatile teaching competencies, this dual-path approach innovates teacher development through two key drivers: First, implementing cross-disciplinary seminars where experts from STEM, humanities, social sciences, and education co-design integrated curricula, fostering knowledge exchange through project-based collaboration. Second, creating parallel theory-practice pathways: enhancing curriculum integration skills through university-based interdisciplinary units while engaging teachers in industry-academia-research partnerships to develop authentic cross-disciplinary teaching experience—forming a virtuous cycle where practice informs theory. Additionally, innovative recruitment mechanisms attract practitioners from diverse fields to build a "dual-qualified" faculty structure that complements theoretical expertise with practical insight.

5. Conclusions and Implications

Under the macro background of the construction of new liberal arts, the quality standard of liberal arts talent cultivation has been continuously upgraded. By systematically analyzing the new orientation of talent training in the context of the construction of new liberal arts, this paper makes it clear that the talent training system for education majors is no longer limited to the training of subject teachers. Instead, it focuses on cultivating educational engineers with interdisciplinary thinking ability and the ability to realize the transformation of theory and practice. This new idea of talent cultivation provides a new direction and a new mode for the cultivation of educational talents in comprehensive universities. (The overall operational approach is shown in Figure 3.) In the future educational practice, this talent cultivation system should be optimized and improved, so as to make it close to the needs of the times and the

requirements of the construction of new liberal arts. And then cultivate more compound and applied educational engineers who meet the needs of social development.

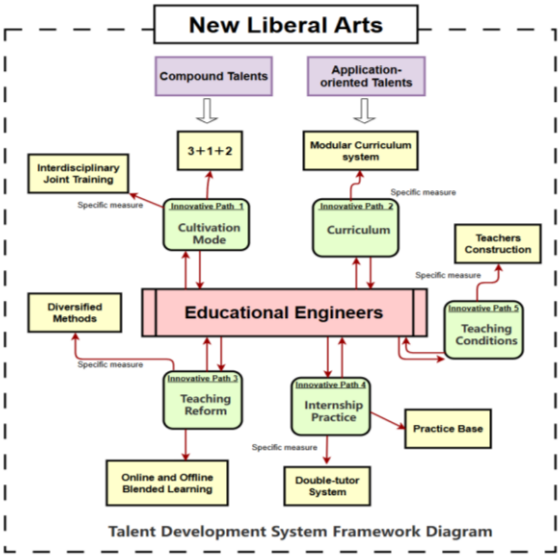

Figure 3. Overall framework of the talent cultivation system for education disciplines in comprehensive universities under the new liberal arts context

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References

An, F. C., & Wang, M. Y. (2019). The essence, status and system of new liberal arts construction. *Academic Exchange*, (11), 5-14+191.

Li, F. L. (2020). New liberal arts: Definition, positioning and orientation. *Exploration and Free Views,*(1), 5-7.

Li, L., & Sun, N. N. (2024). Innovation of talent training system for liberal arts in universities under the background of new liberal arts construction. *Heilongjiang Researches on Higher Education, 42*(11), 52-57. https://doi.org/10.19903/j.cnki.cn23-1074/g.2024.11.005.

Liu, Q. (2016). On cultivating educational engineers. *Contemporary Education and Culture, 8*(2), 1-11.

Liu, Q. C. (2016). On educational engineers: A theoretical construction of a new profession. *Journal of South China Normal University,* (5), 60-73+190.

Liu, Q. C. (2016). *Theoretical exploration on the transformation of educational engineering theories into practice.* Fujian Education Press. p.158.

Wang, Z. Y., & Lu, Y. D. (2023). Holistic education promoting talent training system construction in normal universities under the new liberal arts background. *Journal of Educational Observation, 12*(20), 26-29+115. https://doi.org/10.16070/j.cnki.cn45-1388/g4s.2023.20.026.

Xia, W. B. (2019). What is new about the new liberal arts. *Journal of Shihezi University, Philosophy and Social Sciences, 33*(6), 133. https://doi.org/10.13880/j.cnki.cn65-1210/c.2019.06.003.

Zhu, H. L., & Hao, X. J. (2023). Cultivating interdisciplinary talents under new liberal arts construction: New situations, challenges and approaches. *Higher Education Exploration,* (4), 20-25.