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Research on the Construction of the "Enrollment-Training-Employment" Tripartite Linkage Mechanism in Application-Oriented Universities: Taking the Landscape Architecture Major of the College of Science and Technology, China Three Gorges University as an Example

Mao Mao*, Jing Xu, Chengjun Zhou*, Jun Wang

College of Science and Technology, China Three Gorges University, Yichang, Hubei 443002, China

***Corresponding author:** Mao Mao, mmyy8285@163.com; Chengjun Zhou, cjzhou@ctgu.edu.cn

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Abstract: Against the backdrop of a new round of scientific and technological revolution and industrial transformation sweeping the globe and the country's comprehensive promotion of the construction of a quality-strong nation, this paper analyzes the existing problems and their causes in light of the school's history and actual situation. The paper proposes the main countermeasures for constructing the "enrollment-training-employment" tripartite linkage mechanism. By leveraging the innovative reform practice and demonstration-leading role of pilot majors, it explores the sustainable development path for application-oriented undergraduate universities that can adapt to the changes of the new era, meet the demands for high-quality talents, and effectively improve the quality of talent cultivation in the school, forming a closed-loop of connotative development.

Keywords: High-quality; Employment; Reform; Talent cultivation

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1. Introduction

At present, a new round of scientific and technological revolution and industrial transformation is sweeping the world. Artificial intelligence, mobile Internet, big data, quantum technology, and biotechnology have become the cutting-edge technologies that countries focus on and compete for. The international competition in high-tech fields not only accelerates scientific and technological innovation and iteration but also updates the production and living methods of human society. It also promotes the fundamental transformation of modern

industries from “empowerment” to “intelligence empowerment” and from “quantity” to “quality.” Therefore, to meet the challenges of the new era, promote Chinese-style modernization, and create a new global brand and image of “Chinese quality”, it is necessary to implement the strategy of building a quality-strong nation. Education and talent are important guarantees and fundamental support for this strategy.

On February 6, 2023, the “Outline for Building a Quality-Strong Nation” issued by the Central Committee of the Communist Party of China and the State Council pointed out that in the face of the new situation and requirements of the world today, it is necessary to shift the focus of development to improving quality and efficiency, cultivate new economic development advantages with technology, standards, brands, quality, and services as the core, promote the transformation of “Made in China” to “Created in China”, “China Speed” to “China Quality”, and “Chinese products” to “Chinese brands”, and unswervingly promote the construction of a quality-strong nation [1]. It also requires that “quality-related content be incorporated into compulsory education in primary and secondary schools, higher education institutions be supported to strengthen the construction of quality-related disciplines and the setting of majors, the vocational training system and professional title system for quality-related technical and skilled talents be improved, and the effective connection between the professional title system and the vocational qualification system be achieved, to focus on cultivating quality-related skilled talents, scientific research talents, and business management talents. A quality policy evaluation system should be established to strengthen result feedback and follow-up improvement.” In the “Notice of the Ministry of Education on Doing a Good Job in the Employment and Entrepreneurship of Graduates from National Regular Institutions of Higher Education in the Class of 2023”, it is also clearly required that “local governments and universities should establish and improve an effective linkage mechanism between employment, enrollment, and training, and take the employment situation of college graduates as an important part of the adjustment of the higher education structure” [2].

Whether from the perspective of the demand for innovative talents in the era of change or from the perspective of the quality of talent cultivation that determines the survival and development of universities themselves, the comprehensive reform of universities, which is oriented by the employment market and talent demand, aims at high-quality talent cultivation and takes the integration of industry and education as the main means, is an inevitable path and an important guarantee for constructing the “enrollment-training-employment” tripartite linkage mechanism. Internationally, the cooperation and development between higher education institutions and the industrial sector started relatively early. There are relatively mature experiences in the research and practice of the integration of industry and education to enhance mutual assistance and interaction, improve teaching quality, and promote innovation and entrepreneurship. The cooperation between German higher education institutions and the industrial sector focuses on the fields of technology and engineering, and they jointly carry out highly targeted and practical research projects. American universities and the industrial sector highlight the cultivation of innovation-driven and entrepreneurial spirit in their cooperation, forming a relatively complete innovation and entrepreneurship education system. The cooperation between British higher education institutions and the industry has its uniqueness in interdisciplinary and cross-organizational knowledge transfer [3]. At the same time, in terms of guarantee measures such as policies, regulations, and institutional organizations, the advanced practices of European and American countries can also provide a reference value for the cultivation of high-quality talents through the integration of industry and education in China.

2. Current situation and causes

2.1. Development status

As a local application-oriented university with a history of more than 20 years and in the process of transformation and upgrading, the school has a large scale of teachers and students, a stable source of enrolled students, and rich educational achievements. It has a complete range of disciplines, standardized education and teaching, a good social reputation, and comprehensive development of students. In recent years, the school has seized opportunities to accelerate the development of transformation and comprehensive reform, continuously deepened teaching reform, improved teaching quality, and comprehensively promoted the educational concept in the new era of "full-employment, integration of industry and education, adaptation to the times, and service to local areas." However, it should also be noted that in today's era of increasing technological innovation and rising employment difficulties, the school has problems such as being divorced from the market, lacking innovation, having single-dimensional abilities, and being insufficiently adaptable in terms of professional structure, training models, and graduates' abilities, which is not conducive to the healthy development of our school's higher education.

2.2. Problems and causes

2.2.1. Main problems faced currently

With the transformation of industries and the change of technologies, the school faces increasingly fierce employment competition for graduates, growing employment difficulties, and a prominent imbalance between the supply and demand of talents, with the "labor shortage" in enterprises and the "employment difficulty" of graduates. The overall number of employment positions has decreased, and students' employment awareness is weak. Traditional industries and some majors are greatly impacted by the market, resulting in insufficient applicants and low employment confidence. The comprehensive qualities and professional abilities of graduates do not match the social demand. The development of enrolled majors is unbalanced, and the proportion of the number of students in "popular" majors and other majors is seriously uncoordinated [4].

2.2.2. Analysis of the causes of the problems

Since the implementation of the college enrollment expansion policy in 1999, the number of college graduates has increased by more than 10 times in over 20 years. At the same time, the economic transformation and technological changes in the new era have led to a continuous reduction of employment positions in traditional industries, which has become the main reason for the increased employment competition pressure on graduates. This, in turn, has led to frequent employment avoidance psychology among students, a lack of employment motivation, and insufficient career awareness. When facing employment choices such as taking the postgraduate entrance examination, taking the civil service examination, seeking direct employment, or starting their own businesses, students generally have serious blindness and herd mentality. In terms of talent intake, society's incomplete and irrational understanding of "popular" majors, and in talent cultivation, the disconnection between education and teaching and industry development also restrict the sustainable and healthy development of our school and the quality of talent cultivation.

3. Countermeasures

3.1. Construct the "Enrollment-Training-Employment" tripartite linkage mechanism to promote the integration of production, education, research, and application

Implement the "Talent-Priority Development Strategy", keep up with the needs of the times and market

changes, seize the opportunity of the school's transformation and upgrading, and promote the implementation of the special action of "deepening teaching reform and student-affairs reform, focusing on improving the quality of talent cultivation, and comprehensively promoting full employment of college students". Take the pilot reform majors as the starting point, rely on and connect with local enterprises and public institutions. Through deepening teaching reform and constructing the "enrollment-training-employment" linkage mechanism, effectively form a closed-loop system for the "talent intake, training process, and talent output" of universities, align the goal of comprehensively promoting employment work with the talent demands of local construction and industrial services, and promote the "full-staff, whole-process, and all-around" education and employment of universities and local areas/enterprises (**Figure 1**).

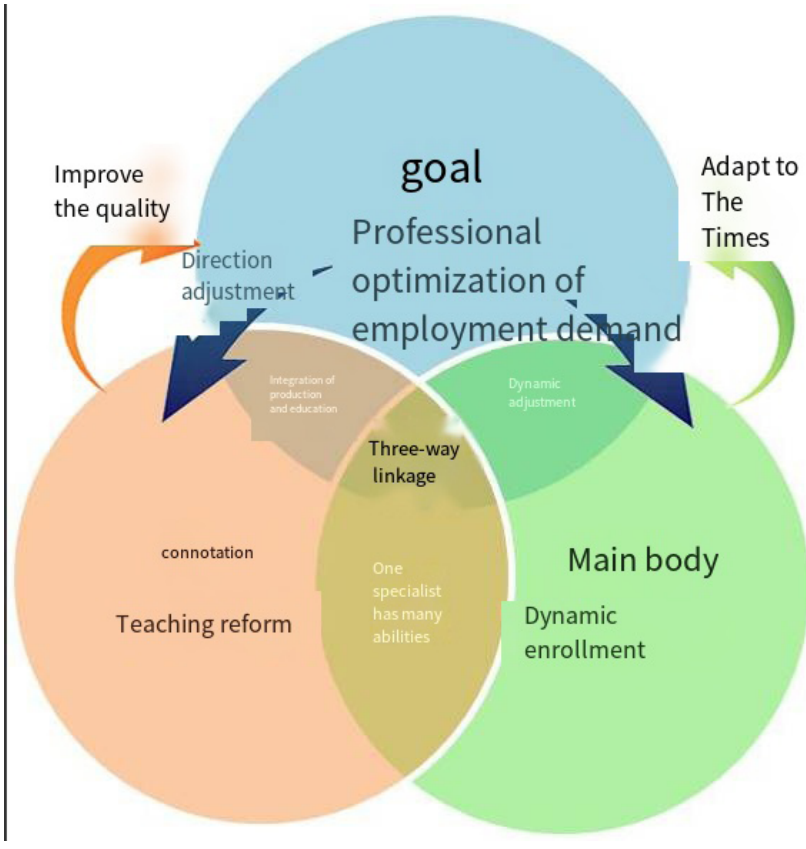

Figure 1. Three-way linkage mechanism of enrollment, training, and employment

3.2. Form a whole-process career planning education integrating "Entrance Education, Professional Teaching, and Employment Guidance"

Career planning education is an important means to help students comprehensively understand the changes of the times, industry trends, social demands, and career development based on their understanding of majors, and correctly establish a rational and comprehensive career outlook, employment outlook, and career-selection outlook. Single-session course teaching alone cannot achieve satisfactory results. Through the full cooperation of full-time teachers, employment tutors, and professional leaders, a joint force for career planning education can be formed in various links, throughout the whole process, and through multiple channels, such as freshman entrance education, curriculum ideology, and politics in professional courses, compulsory career development

courses, and graduate employment guidance, to create a multi-dimensional and three-dimensional employment guidance and assistance system [5–6].

3.3. Deepen teaching reform and implement the transformation of cultivating high-quality "Versatile and Multidisciplinary" talents

The cultivation process is a key link in high-quality talent cultivation and has an important connotation for improving the employment ability of college graduates and the quality of enrolled students. "Versatile" requires students to expand their professional skills, predict industry development, and adapt to market changes. "Multidisciplinary" requires students to have innovative practical abilities, interdisciplinary integration capabilities, and comprehensive quality [7]. The traditional teaching model in universities can hardly meet the needs of industrial transformation and industry upgrading in today's era. With the goal of "updating knowledge reserves, closely connecting with industries, adjusting employment directions, optimizing training models, strengthening the proportion of practice, and stimulating innovative thinking", schools should promote curriculum construction and teaching reform to fundamentally solve the problem of imbalance between talent supply and demand.

4. System construction and educational practice

4.1. The goal of the "Enrollment-Training-Employment" linkage mechanism: employment-demand-oriented

Professional leaders and the enrollment and employment department jointly conduct in-depth research in enterprises, pay attention to current industry development, market changes, and employment demands, change the inherent understanding of employment directions, and actively expand various cooperative enterprises and public institutions and new job positions for this major. Based on the two major types of enterprises, landscape design and garden construction, cooperative enterprises in "multi-dimensional and new business forms" such as garden management, cultural tourism, seedling cultivation, digital industry, and intelligent construction are added, laying a foundation for implementing the new educational goal of "teaching students in accordance with their aptitudes and promoting their all-around development" for students majoring in this field and promoting the integrated training model of "cultivation through industry-education integration and direct access to internships and employment."

Taking the needs of the times as the orientation and using it as the guiding principle for adjusting the talent-cultivation direction and improving students' abilities. Organize and complete the compilation of a new version of the talent-cultivation plan corresponding to the "enrollment-training-employment" linkage mechanism, further optimize the proportion of theoretical and practical links, and open up windows for the integration of industry and education and school-enterprise joint teaching. Adjust the talent-cultivation goals and the directions of ability and quality of each major in a timely manner according to the changes of the times and industrial transformation, seek new "tracks" for employment and entrepreneurship, and endow students with the ability to "adapt to changes and take the initiative to change."

Taking the employment outlet as the orientation and using it as the basis for the dynamic adjustment of discipline setting, student-source plans, and professional structures. In terms of discipline setting, give full play to the role of macro-control of market demands, timely update, transform, shut down, or add majors, and actively explore the development path of multi-disciplinary integration of "Digital +" and "Internet +." In terms

of student-source plans, on the one hand, reasonably adjust the enrollment plans of majors according to talent demands and employment data. On the other hand, based on the big data of employment destinations and the industry development in student-source areas, more targeted student-source plans can be allocated. In terms of professional structures, optimize the ratio of undergraduate and junior college programs, give full play to the advantages of industrial colleges in cultivating vocational-skilled talents and providing direct access to employment, and form a new paradigm of discipline development for the integrated construction of production, education, and research [8].

4.2. The main body of the "enrollment-training-employment" linkage mechanism: Dynamically adjusted enrolled students

Taking the "comprehensiveness, interdisciplinarity, applicability, and flexibility" of the landscape architecture discipline of the pilot major as its characteristics and advantages, plan to gradually construct a "sustainable development" professional structure system that integrates planning, design, tourism, entertainment, and cultural and creative industries, including "smart cities, digital villages, modern cultural tourism, forest health care, virtual reality, and visual branding". This system features interdisciplinary integration, complementary undergraduate and junior-college levels, and school-enterprise joint construction, which is more conducive to coping with market changes in the industry and dynamically adjusting the composition of students within the professional system in a timely manner.

Based on the analysis of big data on enrollment sources over the years and the analysis of big data on the employment destinations of graduates, flexibly adjust the enrollment plans in student-source areas and the destinations for visiting enterprises and expanding job opportunities. The natural resources, economic advantages, and industrial layouts of different regions and provinces vary. Therefore, the cognitive and acceptance levels of students and parents in different regions towards different industries will directly affect their major choices and career plans. At the same time, different regions also have significant differences in talent demands for graduates of different majors. Analyzing big data can make the allocation of student-source plans for different majors in different provinces more accurate and scientific, and also help to develop the employment market more targeted [9].

Learn from the successful experience of school-enterprise cooperation models such as successful industrial colleges and order-based classes, and innovate and transform traditional enrollment and training models. Industrial colleges can integrate the respective advantageous resources of schools and enterprises. Through models such as joint teaching, on-the-job internships, production and research and development, and order-based training, they can highly integrate and complement the trend hotspots, technological innovations, and employment channels of the industry with the theoretical basis, academic research, and environmental facilities of universities. Learn from domestic and provincial universities and enterprises that have successfully established and are operating industrial colleges, implement the construction of innovative industrial colleges in the pilot colleges and majors of the school, and gradually promote the modern educational practice experience of industry-education integration throughout the school, ultimately completing the comprehensive update of the high-quality talent-cultivation model for application-oriented universities.

4.3. The connotation of the "Enrollment-Training-Employment" linkage mechanism: Innovative teaching reform

Encourage the professional leaders and teaching teams of pilot majors to take the lead in and continuously carry

out teaching reform, curriculum construction, and professional optimization. Conduct in-depth and thorough reform, innovation, and teaching practice starting from aspects such as the adjustment of talent-cultivation plans, curriculum setting, teaching methods, teaching content, assessment methods, curriculum ideology and politics, and the construction of three types of classrooms. Connect the knowledge points of professional courses with national policies, industry trends, local construction, and enterprise projects, update the talent-cultivation directions and the goals of ability and quality in a timely manner, and implement the cultivation of innovative and application-oriented talents to meet the needs of the times and industry development [10–11].

Break the boundaries of disciplines, form interdisciplinary teaching teams across academic divisions and schools, gradually introduce new majors, new directions within the discipline, or interdisciplinary and dual-qualified young talents, and widely invite industry experts and technical backbones to serve as part-time teachers to participate in all aspects of curriculum teaching, discipline construction, internship practice, teaching and research, discipline competitions, and employment guidance. Build a teaching reform and innovation guarantee through the construction of a teaching staff with a reasonable structure, cross-border innovation, and a local-based focus [12].

Continuously promote the transformation of scientific research achievements into teaching to provide sustainable vitality for innovative teaching reform. Taking the landscape architecture major of our university as an example, encourage the discipline team to form a joint force in scientific research directions such as "beautiful countryside, urban renewal, intelligent construction, land use planning, and cultural and tourism planning", as well as in teaching and research directions like "new engineering construction, high-quality employment, and practical education", and are committed to cultivating "versatile" talents [13].

5. Achievements of reform and construction

5.1. At the overall school level

Through the work deployment of "two reforms and one action", namely, deepening innovative teaching reform, deepening student management reform, and promoting high-quality employment, the employment-oriented work goals and focus have been determined in the institutional aspect. By establishing the College Students' Development and Employment Guidance Center and selecting class teachers, the educational concept of "full-employment and whole-process, all-round, and all-staff education" has been implemented in terms of personnel. In recent years, the employment rate of the school has significantly increased, the enrollment acceptance rate has steadily improved, and the rudiment of the "enrollment-training-employment" mechanism has taken shape [14].

5.2. At the individual discipline level

5.2.1. Dynamic adjustment of enrollment and admission

The landscape architecture major updates its enrollment brochures and training orientations every year to meet the needs of the times. Based on the analysis of big data on enrollment and employment over the years and the business forms in the student-source areas, it timely adjusts the student-source placement plans in relevant provinces and cities. The number of enrolled students has been increasing year by year in the past three years, and the number of students currently enrolled has become more stable. The number of students majoring in this field in the class of 2024 is twice that of the class of 2022.

5.2.2. Teaching reform and talent cultivation

The landscape architecture major took the lead in implementing the spirit of the school's "two reforms and one action" work, promoting the case-based teaching model of "alternating in-class and out-of-class learning and integrating theory with practice." In the assessment of the completion of the first-round pilot reform, all 5 pilot courses of this major passed, with 3 of them receiving excellent grades, playing a good exemplary and leading role within the school. It actively promotes the integration of industry and education and serves the local area. It has carried out in-depth cooperation with the Yichang Landscape Architecture Society in discipline construction, curriculum teaching, academic activities, internship, and employment. A large number of enterprise experts have been invited to participate in various aspects of professional education and teaching, taking the initiative to contribute to local urban renewal and rural revitalization. The comprehensive abilities of students and the learning atmosphere have been continuously improved. The teaching achievements have generated direct social benefits and have been highly recognized by local governments, enterprises, and public institutions [15].

5.2.3. High-quality employment and demand-orientation

The teaching team of the landscape architecture major has continuously conducted in-depth research and visits in the industry and enterprises explored and identified the growth points of new-quality productive forces and new employment directions for this major, and continuously expanded the cooperative enterprises for direct internships and employment. It fully integrates career planning and employment guidance into entrance education, professional course teaching, and extracurricular activities, and persists in strengthening and enhancing students' employment awareness and professional identity. The employment rate of landscape architecture graduates in the class of 2022 reached 95%, and the postgraduate entrance examination admission rate reached 10%. In the class of 2023, the employment rate reached 98%, the postgraduate entrance examination admission rate reached 12.5%, and the civil service admission rate reached 6%. In the class of 2024, the employment rate reached 95%, the postgraduate entrance examination admission rate reached 13%, and the civil service admission rate reached 6%.

6. Deficiencies and prospects

6.1. Existing deficiencies

Affected by the current transformation and transition stage of the school, the "enrollment-training-employment" mechanism of this major is not yet complete and mature. The current educational framework and enrollment levels of the pilot major are still in a single state, with weak resilience. The employment-outlet units and industry-education-integrated enterprises mainly come from the local city, with limited talent demand, which is not conducive to the sustainable and healthy development of this major. Restricted by factors such as funds, safety, systems, and frameworks, the talent-training model and innovative teaching reform have not achieved the expected results, and the "integration of production, education, research, and application" is still in its infancy.

6.2. Goals and prospects

The "enrollment-training-employment" tripartite linkage mechanism is the key to realizing the closed-loop of connotative development in application-oriented universities. It needs to be continuously constructed and optimized in the following aspects.

Pay attention to industry development trends, seize the opportunity of the college's transformation, prepare well for the application of new undergraduate and junior college majors, and plan in advance a more reasonable and comprehensive educational framework and professional levels to lay a solid foundation for dynamic enrollment.

Further expand cooperation with enterprises and public institutions in landscape design, garden construction, municipal engineering, greening management, digital media, cultural and tourism planning, intelligent construction, etc., as well as the resources of universities that enroll postgraduate students majoring in landscape architecture, environmental design, horticultural plants, territorial spatial planning, architecture, etc., to broaden the channels for employment and further study.

Based on this major and related majors, refer to the talent-training models of mature industrial colleges, improve the "industry-education integration and practical education" system and regulations, deepen cooperation with local industries, continuously promote the "integration of production, education, research, and application", and do a good job in the connection of the upstream, midstream, and downstream to provide guarantee for talent cultivation.

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Disclosure statement

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References

[1] The Central Committee of the Communist Party of China and the State Council, 2023, The Central Committee of the Communist Party of China and the State Council issued the "Outline for Building a Quality-Strong Nation".

[2] The Ministry of Education, 2024, Notice of the Ministry of Education on Doing a Good Job in the Employment and Entrepreneurship of Graduates from National Regular Institutions of Higher Education in the Class of 2024.

[3] Xu SK, Li ZY, Wang JH, 2024, High-Quality Development of the Integration of Industry and Education in Universities: International Experience, Chinese Advantages, and Future Prospects. Research in Higher Education of Engineering, 2024(3): 109–114.

[4] Sun YT, Yu J, Liu BS, 2022, Research on the Construction of the Linkage Evaluation Index System for "Enrollment-

Training-Employment" in Application-Oriented Undergraduate Universities. Educational Exploration, 2022(11): 41–43.

[5] Wang ZB, Zou YH, Yang YX, et al., 2024, Effectively Integrating Career Planning into the Employment Education of Freshmen in Universities. China Employment, 2024(11): 84–85.

[6] Liu L, Li J, 2024, Research on the Construction of the "Whole-Process Penetrating" Career Planning Education System in Vocational Colleges. Employment and Security, 2024(9): 28–30.

[7] Talat YNTKQ, 2022, Practical Reflections on Establishing the "Three-All Education" and "Versatile" Talent-Training System. Employment and Security, 2022(3): 190–192.

[8] Zhou ZY, Zhu SY, Wang DM, 2013, Research on the Setting and Adjustment of Majors Oriented by Employment-Taking the Accounting Majors of Hangzhou Dianzi University as an Example. China University Students Career Guide, 2013(20): 32–37.

[9] Liu SS, 2018, Research on the Reform of the Postgraduate Enrollment System Oriented by Employment: Taking Universities in Tianjin as an Example. Industrial & Science Tribune, 17(9): 158–159.

[10] Qiu HY, 2021, Exploration of Professional Education and Teaching Reform Oriented by Employment. Research and Practice on Innovation and Entrepreneurship Theory, 4(15): 94–96.

[11] Guo WL, Ding XL, Yin ZG, et al., 2016, Research on the Educational and Teaching Reform and Professional Structure Adjustment Oriented by Employment. Learning Weekly, 2016(34): 42–43.

[12] Shen LH, 2013, Research on the Professional Construction of Independent Colleges Oriented by Enrollment and Employment. Journal of Heilongjiang College of Education, 32(5): 19–20.

[13] Fan W, 2024, Analysis of the Linkage Mechanism of Enrollment, Training, and Employment in Institutions of Higher Education. Intelligence, 2024(35): 133–136.

[14] Li DH, 2024, Thoughts on Constructing an Integrated Model of Enrollment, Training, and Employment in Application-Oriented Undergraduate Universities. Employment and Security, 2024(10): 70–72.

[15] Li ZQ, 2024, Analysis of the Construction of the Enrollment-Employment Linkage Mechanism in Universities under the New Situation. Employment and Security, 2024(5): 169–171.

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