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A Study on the Reform of an Integrated Talent Cultivation Model Combining Medicine, Education, Healthcare, and Tourism under the Background of the Silver Economy

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Abstract

Against the backdrop of the accelerated development of the silver economy and the cross-sector integration of the health industry, emerging formats such as wellness and healthcare tourism, medical stay programs, and education for older adults have posed new requirements for talent cultivation in higher education, characterized by "composite competencies, real-world scenarios, and collaborative governance." Focusing on the localized needs of integrated wellness and cultural tourism development in Dalian, this study, grounded in Outcome-Based Education (OBE), Project-Based Learning (PBL), and theories of industry–education integration and collaborative innovation, constructs a closed-loop integrated talent cultivation model combining medicine, education, healthcare, and tourism, encompassing educational objectives, competency models, curriculum clusters, task-chain practices, multi-stakeholder collaboration, and quality evaluation. The study further proposes a phased implementation pathway and a standardized project task framework. The findings suggest that, through curriculum restructuring and real-task-driven learning, the proposed model effectively enhances students' competencies in health and age-friendly service awareness, wellness product and experience design, cross-sector resource integration and operational governance, as well as digital innovation and iterative evaluation, thereby providing sustainable talent support and practical solutions for the development of regional wellness hubs.

Keywords

Silver Economy, Integration of Medicine, Education, Healthcare, Tourism, Collaborative Talent Cultivation.

1. Introduction

As China's population continues to age and the size of the older adult population expands, consumption potential driven by needs in health management, eldercare services, wellness and healthcare tourism, and spiritual and cultural enrichment is being released at an accelerating pace. The "silver economy" has thus become a major growth engine for high-quality economic and social development. In 2024, the General Office of the State Council issued the Opinions on Developing the Silver Economy and Enhancing the Well-being of Older Adults, marking the first systematic national-level deployment of the silver economy. The document explicitly calls for cultivating diverse business formats, optimizing service provision, and promoting industrial integration, providing clear policy guidance for the development of the wellness and healthcare

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sector. Meanwhile, during the 14th Five-Year Plan period, national health planning further emphasizes deep integration between the health industry and sectors such as eldercare, medical services, tourism, culture, and education, with the aim of building a life-course health service system. Against this backdrop, new integrated business models—such as wellness and healthcare tourism, medical stay programs, and education for older adults—are rapidly emerging, creating new practical demands for the cultivation of composite, application-oriented talent.

As a representative coastal city, Dalian possesses notable comprehensive advantages for developing the wellness and healthcare industry. With a favorable location, surrounded by the sea on three sides, and a mild, livable climate, the city is well suited to long-term wellness and residential tourism. In addition, its relatively concentrated medical and higher education resources provide strong support for talent development and service innovation in the wellness sector. In practice, Dalian has initially established a wellness tourism product system featuring coastal, forest, and hot-spring wellness offerings, while continually expanding integrated formats such as medical wellness, study-tour wellness, and education-oriented wellness. This expansion promotes the coordinated development of natural resources, cultural assets, and public service elements. Such trends not only raise new requirements for the industrial system but also pose fresh challenges to the goal setting, curriculum structure, and practice-oriented training models of higher education institutions.

However, in reality, talent cultivation in relevant university programs still commonly suffers from pronounced disciplinary fragmentation, fragmented practical training, and insufficient depth of university–local collaboration, making it difficult to effectively meet the real needs of multi-format integration in "medicine–education–wellness–tourism." How to respond to new trends in the integration of wellness and cultural tourism under the silver economy by establishing an industry-demand-oriented, competency-centered integrated talent cultivation model has become an urgent issue. Accordingly, this study focuses on the requirements of "medicine–education–wellness–tourism" integration, examining the pathways and operational mechanisms for building an integrated talent cultivation model. It aims to reconstruct the curriculum system and practice-based teaching content, improve multi-stakeholder collaborative education mechanisms, and develop a relatively systematic evaluation framework, thereby providing stable and sustainable talent support for the integrated development of wellness and cultural tourism.

2. Literature Review and Theoretical Foundations

2.1. Review of Domestic and International Research

Research on the silver economy and the wellness and healthcare industry, both in China and abroad, has primarily focused on changes in demand structures brought about by population aging, the restructuring of health service delivery systems, and the enhancement of destination competitiveness for wellness tourism and long-stay programs. International studies tend to approach these issues from perspectives such as "healthy aging," "age-friendly destinations," and "integrated care," with an emphasis on service systems and experience design. Domestic research, by contrast, has concentrated on policy responses to the silver economy, the construction of wellness and healthcare industrial chains, and the development of wellness tourism resources and route-based products, forming relatively mature conceptual frameworks such as "integration of medical care and eldercare" and "culture–tourism integration." Correspondingly, discussions on cross-sector integration pathways have deepened, highlighting the integration of medical, educational, cultural, and tourism resources to foster emerging formats such as medical wellness and study-tour wellness, while also

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examining the enabling role of new technologies, new platforms, and new delivery vehicles in expanding wellness services and consumption scenarios.

In the field of education and talent cultivation, topics such as industry–education integration, university–local collaboration, and collaborative education have generated substantial research outputs. Common approaches include university–enterprise co-developed curricula, dual-mentor systems, practice bases, and project-based training. Overall, however, much of the existing literature remains at the level of industrial planning, product supply, and cooperation models. There is a relative lack of research on competency models for composite talent, curriculum restructuring schemes, practice-oriented project chains, and quality evaluation systems tailored to the deep integration of multiple formats within "medicine–education–wellness–tourism." In particular, systematic talent cultivation models that are replicable, implementable, and scalable are still scarce, which constitutes the main entry point of this study.

2.2. Theoretical Foundations

This study is grounded in three main theoretical perspectives. The first is Outcome-Based Education (OBE), which constructs "composite competency indicators" oriented toward job roles and real-world scenarios, and then works backward to design curriculum objectives, instructional content, and assessment evidence. The second is Project-Based Learning (PBL), which embeds authentic tasks—such as wellness product planning, service process design, resource integration, and operational evaluation—into teaching, thereby strengthening students' problem-solving and collaborative capacities in complex contexts. The third is the theory of collaborative innovation and industry–education integration, which emphasizes joint talent cultivation, shared evaluation, and continuous iteration among governments, universities, medical institutions, wellness organizations, and tourism stakeholders, forming an educational ecosystem characterized by resource sharing, co-construction of processes, and co-utilization of outcomes.

3. Analysis of Industrial Demand and Diagnosis of Pain Points in University Talent Cultivation

Job requirements within the integrated "medicine–education–wellness–tourism" sector exhibit an integrated pattern encompassing service provision, product design, collaborative operation, and digital innovation. The corresponding competency structure can be summarized as follows: an understanding of health management and age-friendly service processes, along with risk prevention and safety awareness; the ability to design wellness and cultural tourism routes and scenarios that activate cultural resources and enhance service experiences; proficiency in resource integration and project management across medical, educational, cultural tourism, and wellness entities, with an emphasis on standardization and quality control; and the capacity to apply data-driven thinking and platform-based tools to develop personalized and customized services for older adults.

As a coastal city surrounded by the sea on three sides, Dalian enjoys a livable climate, a concentration of medical and higher education resources, and abundant natural and cultural landscapes. These advantages make it well positioned to transform hot-spring wellness, traditional Chinese medicine cultural experiences, red culture and city memory study tours, and intangible cultural heritage–based therapeutic programs into rich sources of educational projects. However, in practice, prominent challenges remain. Disciplinary barriers hinder the integration of curricula around authentic projects, fragmented practical training disrupts the continuity of the "research–planning–implementation–evaluation" chain, and collaborative education often remains at the level of nominal practice base agreements, lacking co-developed

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courses and jointly evaluated outcomes. As a result, the alignment between talent supply and the actual needs of integrated industrial development is significantly weakened.

4. Overall Framework for the Integrated Talent Cultivation Model of "Medicine–Education–Wellness–Tourism"

To address the demand for composite talents brought about by emerging wellness and cultural tourism formats under the silver economy, this study develops an integrated talent cultivation model of "medicine–education–wellness–tourism" from three dimensions—model, system, and mechanism. The result is an implementable, assessable, and iterative overall scheme. A "framework diagram of the integrated talent cultivation model" can be used to visualize the closed-loop logic of "goals–competencies–curriculum–tasks–collaboration–evaluation."

4.1. Positioning of Talent Cultivation Goals: Composite, Application-Oriented Talents for Building a Northeast Asia Wellness Hub

The cultivation goals are oriented toward the practical needs of supporting Dalian's development into a Northeast Asia wellness hub, highlighting a competency structure that matches cross-industry integration in the context of the silver economy. The overarching goal is to develop composite competencies in "health literacy + cultural-tourism planning + collaborative operations + digital innovation," enabling students to complete the full process from needs identification to solution implementation across integrated scenarios such as medical wellness, educational study tours, cultural experiences, and tourism services. The specific sub-goals are summarized as the "four capabilities": the ability to identify older adults' health and emotional needs and potential risks; to design wellness products and service processes that balance age-friendliness and experience quality; to integrate multi-stakeholder resources and deliver projects effectively; and to evaluate and iterate using data, feedback, and standards to build sustainable improvement capacity.

4.2. Competency Model and Curriculum Restructuring: Building Curriculum Clusters Based on Composite Competency Indicators

A competency model is constructed around the job task chain, and competency indicators are translated into a curriculum-cluster structure, forming a four-module system: "foundation–core integration–governance–innovation."

(1)General and foundational module: courses such as Introduction to the Silver Economy, Psychology and Communication with Older Adults, Fundamentals of Health Management, Service Ethics and Safety address gaps in students' understanding of older adults' needs, age-friendly service processes, and safety boundaries, providing a shared language and core literacy for subsequent integration.

(2) Integrated core module: courses such as Design of Medical–Eldercare Services, Wellness and Cultural Tourism Product Planning, Cultural Resource Activation, Age-Friendly Experience and Scenario Creation ensure that medical, educational, cultural, and tourism elements co-occur within the same task, avoiding single-track training that focuses only on tourism planning or only on eldercare services.

(3) Operations and governance module: courses including Project Management, Quality Standards and Evaluation, Public Service Collaborative Mechanisms, Risk Management incorporate multi-stakeholder coordination, process management, standardization, and quality assurance into the main teaching thread, enhancing students' ability to translate solutions into operable products.

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(4) Digital innovation module: centering on Data Collection and Analysis, Platform-Based Operational Tools, Personalized/Customized Service Innovation, this module strengthens scenario expansion capabilities enabled by new technologies, new carriers, and new platforms, allowing students to support needs identification, service matching, and continuous optimization through data and tools.

4.3. Practical Teaching System: A Three-Stage Progressive Model Driven by a Real Task Chain

Following the principles of "real problems–real clients/objects–real deliverables," the practical teaching system runs through semesters and academic years, forming a progressive structure of cognitive practice, comprehensive practice, and innovation practice.

Cognitive practice begins with resource mapping and needs assessment. Through interviews, observation, and documentation across medical institutions, wellness organizations, cultural-tourism venues, and educational resources, students develop a resource map, user profiles, and a needs inventory.

Comprehensive practice establishes two project mainlines and develops project packages: (A) "Silver-age medical care + wellness tourism," producing executable plans including route combinations, service process design, risk contingency plans, and experience optimization; and (B) "Educational study tours + wellness tourism," transforming red culture, city memory, and intangible cultural heritage experiences into curricular products and activity workflows to realize integrated design combining "healing + learning + experience."

Innovation practice emphasizes scenario expansion and customized services. Students are encouraged to develop conceptual service packages such as personalized memoir services, cognitive training programs, and early screening for brain health, with feasibility analysis, ethical and safety considerations, and evaluation plans treated as mandatory deliverables, thereby cultivating the methodological competence to move from creative ideas to implementable solutions

4.4. Collaborative Talent Cultivation Mechanism: Co-Construction, Co-Training, Co-Evaluation, and Co-Transformation by Multiple Stakeholders

This project establishes a multi-stakeholder collaboration mechanism involving government agencies, universities, hospitals, wellness institutions, and cultural-tourism enterprises. In co-construction, all parties jointly formulate competency standards and project specifications and co-develop a curriculum case bank and project repository to ensure alignment between education and industry demand. In co-training, a dual-mentor or multi-mentor model is implemented (on-campus mentors + industry mentors), with industry mentors deeply engaged in topic selection, guidance, and evaluation to enhance authenticity and practical value. The evaluation system adheres to co-evaluation, establishing a comprehensive framework around industrial usability, service safety, user experience satisfaction, and innovativeness, supported by both process-based and outcome-based evidence. Ultimately, co-transformation is realized by promoting pilot application and continuous iteration of outstanding 成果, and by consolidating them into case collections, research reports, and replicable templates, thereby achieving mutual empowerment between talent cultivation, service innovation, and local wellness development.

5. Implementation Path of the Integrated Talent Cultivation Model of "Medicine–Education–Wellness–Tourism"

The implementation follows a time-sequenced pathway of "research–repository building–pilot implementation–iterative optimization."

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In the first stage, needs assessment and resource mapping are conducted. Through field visits, interviews, and data collection from medical institutions, universities and continuing education providers, wellness organizations, and cultural-tourism venues in Dalian, a comprehensive output of "resource inventories, scenario catalogues, and silver-age user profiles" is produced. Potential educational project sources—such as hot-spring wellness, traditional Chinese medicine cultural experiences, red culture and city memory study tours, and intangible cultural heritage–based therapeutic programs—are clearly identified.

In the second stage, curriculum clusters and a project repository are developed. Guided by composite competency indicators, course objectives are backward-designed, and authentic topics, real-world scenarios, and real data are embedded into classroom instruction. This stage produces a case bank, task packages, and evaluation rubrics, with clear milestone deliverables and weekly checkpoints.

In the third stage, pilot implementation is carried out. Several courses are selected to form curriculum clusters, within which project-based teaching is organized along two main lines: "silver-age medical care + wellness tourism" and "educational study tours + wellness tourism." Key outputs include route plans, service process designs, risk contingency plans, and experience optimization reports.

In the fourth stage, iterative optimization is conducted based on evaluation data. Learning outcomes, user trial feedback, and mentor review comments are synthesized to refine course content, task complexity, and collaborative role allocation, while mechanisms for university–local, university–medical, and university–enterprise cooperation are further optimized to form replicable project templates.

Typical projects are managed through a standardized "project task brief," which includes: project title; target population and key needs; service scenarios and spatiotemporal boundaries; a resource list covering medicine, education, wellness, and tourism (with at least three elements integrated); service workflows and role allocation; cost estimation and risk control measures; quality and experience evaluation indicators; data collection methods; and plans for iteration and outcome transformation.

Teaching organization primarily adopts project-based and workshop-based formats, with cross-disciplinary teams formed and roles divided into research, planning, operations, and evaluation. Instruction integrates flipped classrooms, scenario simulation, field visits, and expert review, with industry mentors participating throughout topic selection, process diagnosis, and outcome assessment. In addition, a dual-mentor system and project showcase days are introduced to promote continuous improvement and external validation, ensuring that solutions are practical, processes controllable, and outcomes assessable.

6. Conclusion

Grounded in the development of the silver economy and the growing demand for the integration of wellness and cultural tourism, this study constructs an integrated talent cultivation model of "medicine–education–wellness–tourism" from the three interrelated dimensions of model, system, and mechanism, centering on composite competencies in health literacy, cultural-tourism planning, collaborative operations, and digital innovation. Through the design of curriculum clusters and project-based practice pathways, the feasibility and value of the model are validated in terms of curriculum restructuring, continuity of task chains, the operation of collaborative education, and the assessability and applicability of learning outcomes. The findings indicate that a real-scenario-driven approach, supported by multi-stakeholder co-construction and co-evaluation, can effectively enhance students' comprehensive practical capabilities and iterative learning capacity oriented toward the wellness industry. Looking ahead, further expansion in the breadth and depth of collaboration

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among universities, local governments, medical institutions, and enterprises is needed, alongside the refinement of standardized evaluation and quality monitoring systems. Promoting the pilot application and transformation of exemplary outcomes in scenarios such as hot-spring wellness, medical stay programs, study-tour wellness, and intangible cultural heritage–based therapeutic practices in Dalian will help generate replicable and scalable models of talent cultivation.

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