

Research on the Teaching Model Reform of “Competition-Education Integration” in the Course on Artificial Intelligence-Empowered Financial Management for Tourism Enterprises*

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The “Outline of the National Education Development Plan (2024-2035)” proposes leveraging educational digitization to pioneer new avenues and harness artificial intelligence (AI) to drive educational transformation. Addressing challenges in tourism enterprise financial management curricula—such as outdated knowledge, insufficient practical scenarios, weak innovation capabilities, and lack of career awareness—an AI-empowered “competition-education integration” teaching model has been introduced into curriculum reform. This reform integrates subject competition resources, reconstructs knowledge frameworks, designs comprehensive training tasks covering the entire tourism project lifecycle, expands practical training through virtual simulation platforms, and embeds career awareness experiences. It establishes an integrated pathway for knowledge acquisition and competency development. This approach deepens students’ knowledge mastery and practical skills while enhancing their industry adaptability, digital literacy, and innovation capabilities, thereby elevating both teaching quality and talent development outcomes. Concurrently, participation scale and award counts in national competitions have significantly increased, reflecting the overall improvement in students’ practical abilities, innovative potential, and industry readiness.

Keywords: artificial intelligence, financial management in tourism enterprises, “Competition-Education Integration”

Introduction

The Central Committee of the Communist Party of China and the State Council issued the “Outline of the Plan for Building China Into an Education Powerhouse (2024-2035)”, explicitly stating that educational digitization should be leveraged to open new avenues for development and forge new competitive advantages, emphasizing the pivotal role of artificial intelligence (AI) in driving educational transformation. The document calls for accelerating the development of a curriculum system aligned with the digital economy and future industries, promoting the optimization and upgrading of academic disciplines and majors, and cultivating versatile talents capable of meeting the demands of an intelligent society and new industrial structures. Against this backdrop, the rapid advancement of artificial intelligence—particularly generative AI—is profoundly reshaping educational content, delivery methods, and assessment systems. While generative AI applications are gradually emerging in higher education, their implementation remains largely spontaneous, fragmented, and

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limited to low-level individual practices. There is a notable absence of model training and systematic application tailored to specific disciplines and teaching scenarios.

The development of the “New Liberal Arts” has placed higher demands on innovation in teaching models within higher education. Particularly in applied disciplines such as tourism management, how to effectively leverage artificial intelligence to drive curriculum reform and enhance students’ practical skills, innovative capabilities, and multidisciplinary competencies has become an urgent issue. As a crucial component of core operations in tourism enterprises, financial management education must emphasize both the systematic mastery of theoretical knowledge and the application of skills in practical scenarios. Traditional classrooms often face limitations such as outdated textbook case studies, insufficient classroom simulations, and inadequate industry-academia resource integration, resulting in a disconnect between learning and application. Introducing artificial intelligence into tourism enterprise financial management courses and exploring teaching model reforms that integrate competitions with education can not only overcome traditional classroom constraints and enhance students’ decision-making and practical skills in virtual scenarios but also promote the deep integration of disciplinary knowledge, skill training, and professional competency development. This direction aligns with national digital education strategies while opening new avenues for curriculum reform in higher education empowered by artificial intelligence.

Current State of Teaching Financial Management Courses for Tourism Enterprises

Tourism financial management is a foundational course in business administration programs. The curriculum primarily covers methods and skills in financial forecasting, decision-making, budgeting, control, and analysis. Current teaching practices emphasize timely assignment of homework and ample in-class exercises to establish a “learn-practice-reinforce” cycle, helping students internalize fundamental principles. Classroom instruction emphasizes active student engagement to avoid one-way lecturing. Real-world case studies are used to illustrate key concepts, reducing theoretical abstraction and providing concrete support for student comprehension.

Teaching financial management courses for tourism enterprises faces numerous challenges. Based on student evaluations at the end of the term, four main issues emerge: First, the course content is intensive with a large volume of knowledge points. The overall pace is too fast for liberal arts students, and the course involves a relatively high volume of calculations with dense formulas. Liberal arts students, lacking sufficient calculation proficiency, inevitably feel daunted when confronted with extensive computational tasks. Second, practical scenarios are underdeveloped, with content heavily weighted toward calculations. Practical scenarios are primarily described in text, preventing students from immersing themselves in real-world applications. Practical exercises focus mainly on basic financial accounting and statement analysis, lacking comprehensive training in core tourism business practices such as budget management, cost control, and investment/financing decisions. Third, students exhibit insufficient innovation capabilities and limited critical thinking. Students lack awareness of innovation trends and development directions in tourism enterprise financial management, making it difficult for them to think from the forefront of industry development. This results in a lack of forward-thinking and hinders the improvement of their innovation capabilities. Fourth, students have insufficient career awareness. They lack a clear understanding of the responsibilities, job content, and career development paths associated with financial management positions in tourism enterprises.

Overall, single-dimensional financial management skills no longer meet the evolving demands of modern enterprises. Companies now seek financial management professionals who not only master specialized competencies

but also possess risk management awareness, actively engage in management, and contribute strategic insights to business operations. Cultivating innovative thinking and entrepreneurial spirit is essential to ensure greater value in complex commercial environments. Therefore, against the backdrop of the artificial intelligence era, reforming and exploring teaching models for financial management courses in tourism enterprises directly impacts the quality of professional talent cultivation and the alignment with industry talent demands.

Teaching Reform Pathway for AI-Empowered Financial Management Courses in Tourism Enterprises: Integrating Competitions and Education

The overall course reform primarily follows three directions: First, leveraging generative AI to integrate university students' subject competition resources with course knowledge points, dynamically updating teaching content to address iteration lag and conversion gaps. Second, designing practical training tasks that combine AI with academic competitions to stimulate innovative thinking and forward-looking awareness; leveraging resources from the National Virtual Simulation Experiment Teaching Course Sharing Platform to extend student practice time and enhance hands-on skills. Third, connecting AI with real-world corporate financial scenarios to strengthen professional awareness and improve industry adaptability.

Reconstructing Course Content With Competition-Oriented Approaches to Strengthen Foundational Knowledge

First, using the list of university subject competitions, identify contests frequently participated in by tourism management students that are relevant to tourism financial management. Second, categorize these competitions into three main types: innovation and entrepreneurship; business simulation; and strategic planning. The knowledge points required for these competitions, as they relate to financial management in tourism enterprises, primarily cover four areas: capital and resource management, financial data analysis, project financial planning, and entrepreneurial financial solutions. Third, integrate and identify the most relevant and high-quality course knowledge points aligned with the content and requirements of academic competitions, such as instructional videos, courseware, and exercise collections. Dynamically update teaching content to address iteration lag and conversion gaps. Combine course knowledge points with competition projects through deconstruction and reconstruction, designing them into multiple teaching projects. This enables students to master knowledge and skills while completing these projects.

Centered on the core logic of “business practice and competition application orientation”, this approach breaks from traditional chapter sequencing. It reconstructs knowledge modules around “enterprise full-cycle financial management activities and competition task scenarios”, integrating practical financial management requirements from competitions into the curriculum to tightly link knowledge acquisition with competition application. Using five teaching stages—“basic cognition, planning and allocation, core operations, value realization, and optimization and iteration”—as axes, corresponding to enterprise lifecycle financial activities while anchoring the complete process of competition scenarios, a deep binding of “teaching logic + course knowledge + competition scenarios” is achieved (as shown in Figure 1). Each course chapter clearly defines its core content and directly links to specific competition scenarios—such as fundraising plan design in entrepreneurship competitions or cost control in business simulation contests—clearly demonstrating the applicability of knowledge points across different competitions. This enables students to understand precisely where the knowledge covered in each chapter can be applied.

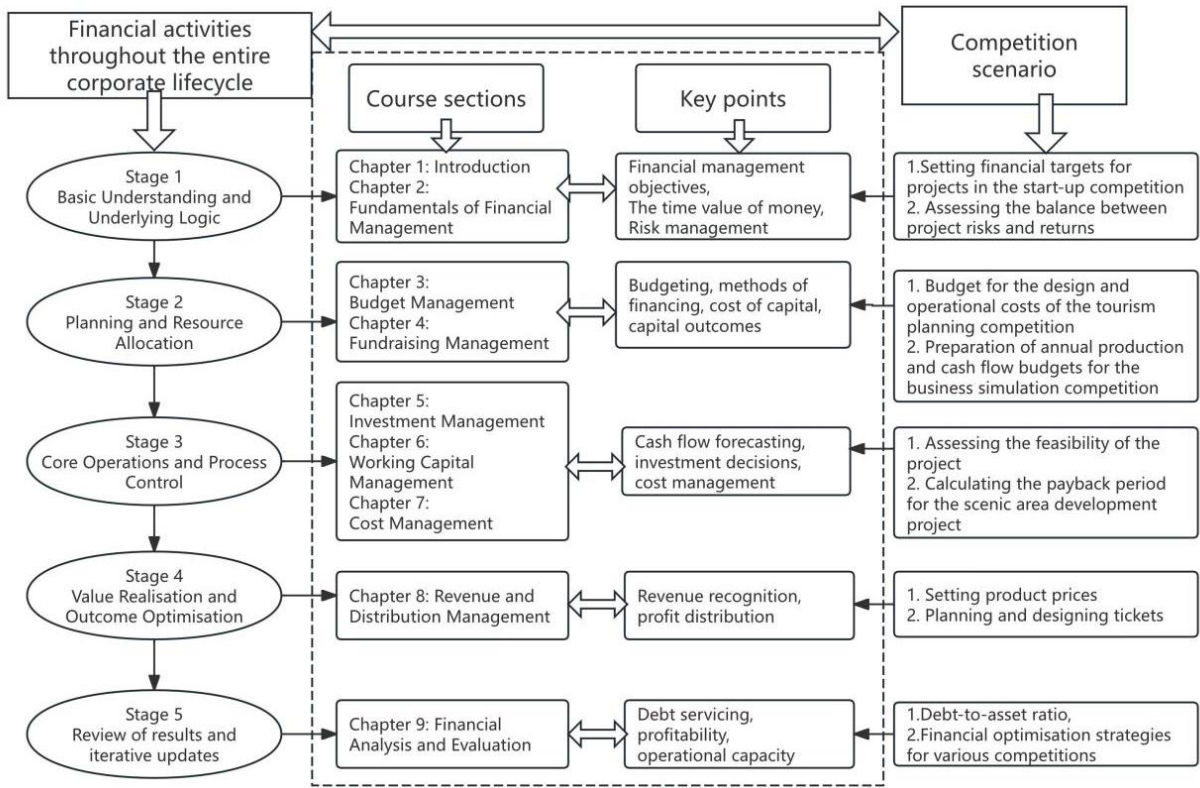


Figure 1. Schematic diagram of reconstructing knowledge points in tourism enterprise financial management.

Using Competition Tasks as Practical Training Projects to Progressively Apply Knowledge

Traditional financial management training courses for tourism enterprises have significant limitations: Core objectives focus solely on mastering formulaic financial management calculations, such as repetitive practice in preparing financial statements and applying formulas, without developing data-driven decision-making and problem-solving skills. This results in students who can “calculate” but not “apply”. Additionally, training tasks were designed in isolation according to course chapter sequences, lacking intermodule connections. This failure to establish a logical framework for the full financial control cycle—from project initiation through operations to closure—resulted in fragmented knowledge application. Consequently, students struggled to navigate complex financial scenarios encountered in real-world work environments.

To overcome this challenge, the course innovatively integrates artificial intelligence technology into a restructured knowledge framework. It redesigns five highly comprehensive practical training projects by incorporating competitive mechanisms. These projects are: Financial Positioning for Tourism Projects; Full-Cycle Financial Planning and Investment Decisions for Tourism Projects; Working Capital and Cost Management for Tourism Enterprises; Revenue Structure Analysis for Tourism Projects; and Comprehensive Financial Analysis for Tourism Enterprises (as shown in Figure 2). These integrated training projects drive the transformation of knowledge application from “fragmented” to “systematic”. The first project, “Financial Positioning for Tourism Projects”, utilizes generative AI tools to integrate market consumption data and regional tourism economic indicators. It guides students in analyzing the financial needs of target customer segments to determine appropriate pricing strategies and investment scales, thereby establishing the project’s financial foundation. The second project, “Full-Cycle Financial Planning and Investment Decisions for Tourism Projects”,

employs generative AI to simulate various market fluctuation scenarios. Students complete end-to-end planning—from investment calculations and financing scheme design to risk assessment—cultivating long-term decision-making thinking. The third training project, “Working Capital and Cost Control for Tourism Enterprises”, provides real financial data from a hotel. Students apply knowledge of capital turnover cycles learned in class to diagnose cash flow issues using generative AI. They also address a hotel’s challenge of declining occupancy during off-peak seasons by adjusting room rates and cost structures, calculating break-even points, and analyzing how different pricing strategies impact profitability. The fourth training project, “Revenue Structure Analysis for Tourism Projects”, examines the income composition of typical tourism ventures like theme parks, rural tourism, and cruise travel. Students calculate the proportion of each revenue stream (e.g., ticket sales, catering) and, guided by AI-generated analysis, design diversified revenue systems. The fifth project, “Comprehensive Financial Analysis of Tourism Enterprises”, provides financial statements (balance sheets, income statements, cash flow statements) and related materials for a tourism company. Leveraging generative AI’s big data analytics capabilities, students apply financial metrics—including solvency ratios, profitability ratios, and operational efficiency ratios—to calculate and analyze the company’s financial health and operational performance. They complete assessments of financial soundness, diagnose operational efficiency, and formulate future development recommendations, thereby comprehensively enhancing systematic analysis and integrated decision-making skills.

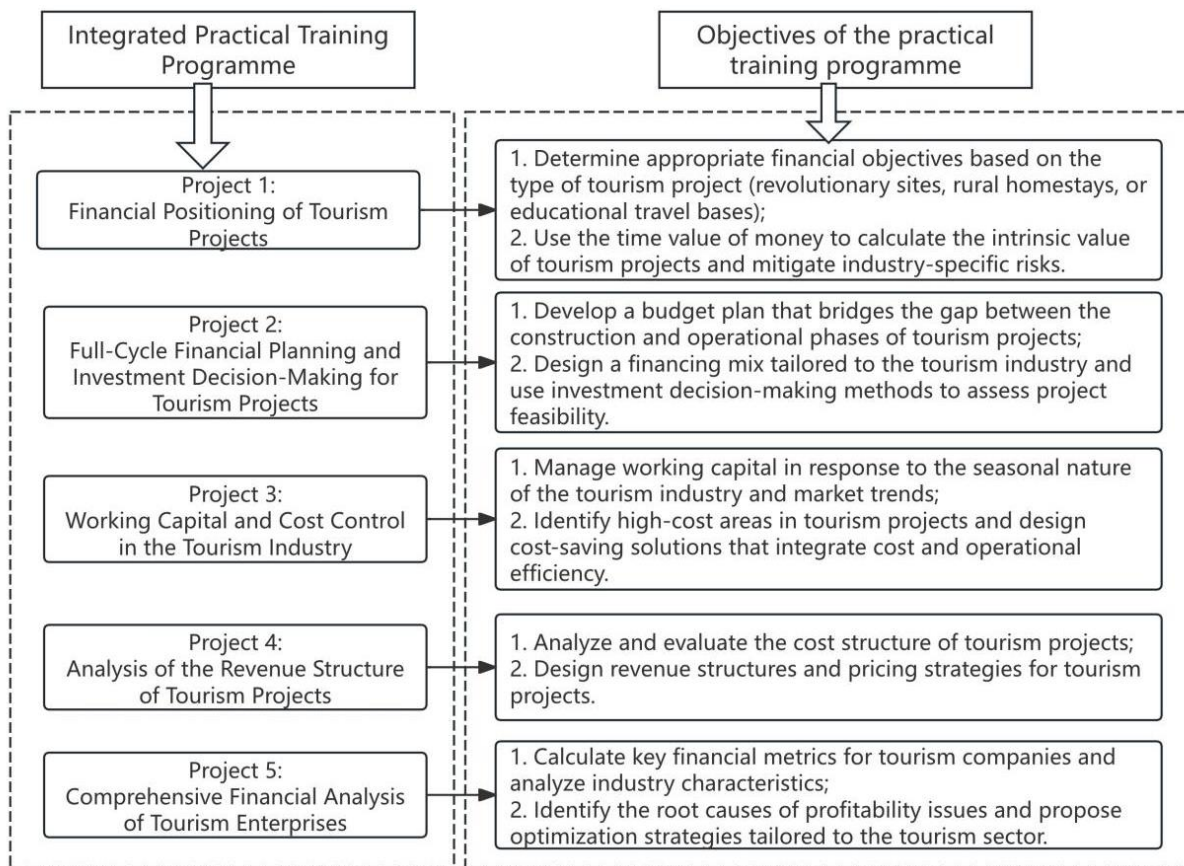


Figure 2. Practical training projects in tourism enterprise financial management.

Utilizing Virtual Simulation Systems to Support Innovative Thinking Training and Enhance Innovation Capabilities

The course innovatively integrates two premium teaching resource platforms to establish an extended practical training pathway for academically capable students. On one hand, it fully leverages the hotel digital intelligence operation virtual simulation experiment from the “Experimental Space” National Virtual Simulation Experiment Teaching Course Sharing Platform. This experiment constructs a highly realistic digital operational environment modeled after authentic hotel management scenarios. On the other hand, it incorporates the Tourism Management Virtual Simulation Experiment from the “Xuetang Online” Course Learning Platform. This platform serves as the official designated learning platform for China’s College Students’ Cultural, Commercial, and Tourism Business Management and Planning Virtual Simulation Competition. Leveraging its rich interactive modules and diverse case library, it offers students multidimensional practical training options. Students may independently select any virtual simulation system for practice based on their learning pace and interests. Within the system, students will immerse themselves in simulating the entire hotel operation process, gaining in-depth experience of the specific job requirements for financial management positions in tourism enterprises. From daily fund accounting and cost control to budget preparation and risk assessment, they will comprehensively experience the professional pressures faced in the role, such as time constraints and data accuracy demands. Through repeated hands-on practice, they will gradually enhance their professional adaptability and stress resilience.

The core of the practical training revolves around four major modules—“Project Development, Digital Marketing, Service Operations, and Performance Evaluation”—through professional role-playing activities. During the project development phase, students must complete hotel investment calculations and financial planning. In the digital marketing segment, they must formulate the most cost-effective promotional budget plan based on real-time market data. Throughout service operations, they need to monitor revenue data in real time and optimize cost structures. The performance evaluation stage requires analyzing operational effectiveness through financial metrics and proposing improvement strategies. Throughout the process, students can leverage the system’s built-in artificial intelligence tools to obtain intelligent analysis suggestions and solutions for challenges encountered in each phase. By tackling real-world problems, the system systematically cultivates digital literacy in data collection, analysis, and application. Moreover, exploring diverse solutions hones innovative thinking and decision-making capabilities.

Career Exploration Experience: Tourism Enterprise Financial Management Course Supporting Career Planning

Previous tourism enterprise financial management courses often focused on theoretical instruction and tool training. Although students could master skills such as financial accounting and report analysis, they lacked a clear understanding of the real work scenarios and career development paths of financial management positions in the tourism industry, leading to career planning often falling into the trap of “armchair strategizing”. The “competition-teaching integration” teaching model builds a crucial bridge between the course and professional awareness, allowing students to complete professional experiences in competition practices and thus clarify their career directions.

The course uses tourism-related competitions as the core carrier, encouraging students to form teams and participate in competitions, deeply binding competition tasks with real financial scenarios in tourism enterprises. During the competition process, students not only use the knowledge points learned in the course to solve

problems but also simulate the work processes and team collaborations of real positions, immersively experiencing the responsibilities, ability requirements, and professional pressures of positions in the tourism industry. Professional cognitive experiences help students discover that tourism industry practitioners not only need solid accounting abilities but also require data analysis and decision-making abilities that combine tourism off-seasons and peak seasons and policy orientations. At the same time, through communication with industry mentors and enterprise judges during competitions, students can intuitively understand the career advancement paths of future employment positions in the tourism industry and the importance of digital literacy for career development in the AI era. Based on these real experiences, students can more accurately assess their own strengths, avoid blind spots in career choices, and deeply bind course learning objectives with personal career planning. For example, students who decide to focus on the hotel industry in the future will actively focus on the “hotel working capital management” module in the course to prepare abilities for career development in advance, truly achieving “learning through competitions and clarifying aspirations through competitions”, making the course an effective auxiliary tool for career planning.

Teaching Effects of AI-Empowered “Competition-Teaching Integration” in Tourism Enterprise Financial Management Courses

The AI-empowered “competition-teaching integration” teaching reform in tourism enterprise financial management courses was implemented for one round in the fall semester of 2024. Judging from student end-of-term evaluations of the course over the past three semesters, a significant increase in the overall participation rate indicates a marked improvement in students’ attention and participation in the course. From the perspective of various evaluation dimensions, the excellent rate of teaching preparation has increased to 85.45%, and the excellent rate of teaching content has reached 81.82%, indicating that the reform has prompted teachers to prepare more fully and made the teaching content richer and more practical. The excellent rate of after-class consolidation is 88.18%, reflecting that the “learning through competitions and promoting practice” approach has effectively strengthened students’ mastery of knowledge. The excellent rate of student mastery is 83.64%, meaning that students have made progress in knowledge understanding and innovative abilities. The excellent rate of teaching and education has increased to 84.54%, reflecting that the course has made progress in professional awareness and value guidance. Overall, the teaching reform has improved course teaching quality and has been widely recognized by students.

At the student ability cultivation level, through AI-driven competition-based practical training, students in this course have gradually transitioned from being able to “calculate” to being able to “make decisions”. Students can not only proficiently use financial management tools but also use AI to model and analyze data throughout the lifecycle of tourism projects, solving complex problems such as cost control and investment decisions. Data show that the proportion of high-quality plans in course practical reports has increased by approximately 40% compared to before the reform, reflecting a significant enhancement in students’ digital literacy, analytical abilities, and innovative thinking. At the same time, the intervention of AI has also improved teaching efficiency: Teachers can use the system to monitor students’ weak learning links in real-time and provide targeted guidance, thus breaking the limitations of previous isolated practical training by chapter and achieving personalized and precise teaching.

In addition, teaching effectiveness is also reflected in a significant increase in students’ enthusiasm for participating in competitions and improved competition results. In terms of specific competition results, for

example, in the first National Tourism Colleges and Universities Tourism Product Planning Competition in 2023, only two teams won awards, while the number increased to 13 teams in the second competition in 2024, more than six times the previous year; in the China College Students' Cultural, Commercial, and Tourism Management and Planning Virtual Simulation Competition, only two teams advanced to the finals in 2024, but 17 teams advanced in 2025 and achieved excellent results, with eight teams winning second prizes nationwide and the remaining nine teams winning third prizes nationwide. Overall, students' confidence and competitiveness in national competitions have significantly increased. The improvement in competition results not only directly reflects the improvement in course teaching quality but also further verifies the advantages of the "AI + competition-teaching integration" model in stimulating students' practical abilities and innovative potential.

Conclusion

The AI-empowered "competition-teaching integration" reform in tourism enterprise financial management courses effectively addresses four core issues in traditional teaching: outdated curriculum iterations, weak practical abilities, insufficient innovative thinking, and lack of professional awareness. By integrating AI to integrate competition resources, construct virtual practical training, design innovative tasks, and connect with industry scenarios, it not only deepens students' knowledge mastery depth and practical operational abilities but also strengthens their industry adaptability, as well as digital literacy and innovation capabilities, leading to improvements in both teaching quality and talent cultivation quality. In the future, the adaptability of AI technology and teaching scenarios can be further optimized, and stratified teaching can be refined based on students' personalized needs to continuously promote the iteration of the "competition-teaching integration" model, cultivate more high-quality financial management talents for the cultural and tourism industry, and achieve synchronization between education and industry development.

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