

# AI-Era Reform of the Talent Cultivation System for Tourism Management Majors: Skill Reconfiguration, Identity Cultivation, and Lifelong Development

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**Abstract:** A severe structural mismatch exists between the traditional talent cultivation system oriented towards basic service skills and the industry's demand for digitally literate, compound talents in the AI era. This mismatch is specifically manifested in four aspects: a misaligned talent skill structure, outdated teaching curriculum systems, a disconnect between practical teaching and industry frontiers, and narrowed student career perceptions. To address this, this paper proposes strategies including reconstructing the curriculum system by integrating AI technologies, building deeply integrated industry-education practical platforms, strengthening professional identity education, and establishing lifelong learning mechanisms. These strategies aim to achieve a paradigm shift from “knowledge transmission” to “high-order competency cultivation”, fostering a new type of compound talent capable of harnessing technology, identifying with the profession, and leading development.

**Keywords:** AI era; Tourism management major; Talent cultivation

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## 1. Introduction

Artificial intelligence technology is reshaping the tourism industry with unprecedented depth and breadth. From big data-driven intelligent decision-making to knowledge graph-enabled personalized smart tourism services, and further to virtual simulation technology providing interactive, immersive tourism experiences, AI has become the core driving force behind the digital transformation of the tourism industry. The talent cultivation system built upon traditional sightseeing experiences, packaged tourism products, and passively provided tourism services can no longer meet the demands of the tourism industry for professional talent in the AI era.

Faced with this transformation, tourism management undergraduate education must systematically reconstruct its core skill system and curriculum framework to cultivate new talents capable of harnessing AI technology and leading industry development. The core of reforming the cultivation system lies in achieving a fundamental paradigm shift from “knowledge transmission” to “high-order competency cultivation.” This requires not only synchronizing course content with technological development but also constructing a talent cultivation system that fosters students’ intrinsic identification with the profession, enables sustainable learning, and ultimately develops them into leaders with insight into industry trends. This system should fulfill a series of cultivation goal systems, namely:

Primary Goal: Enabling tourism management graduates to master various professional skills required by the tourism industry as it is influenced and changed by artificial intelligence.

Intermediate Goal: Enabling tourism management graduates to genuinely identify with their major, thereby actively integrating into and discovering industry development trends.

Advanced Goal: Enabling tourism management graduates to continuously adapt to and grasp industry developments after entering the tourism sector, growing into professional talents possessing both professional competence and ethical awareness.

## **2. Structural dilemmas of tourism education in the AI era**

The talent cultivation system constructed based on traditional tourism formats is facing profound structural dilemmas in the AI era. The core of this dilemma lies in the severe mismatch between educational supply and industry demand.

### **2.1. Talent skill structure fails to meet industry demands**

Traditional tourism management or hospitality management education focuses on basic service skills such as tour guiding, itinerary planning, ticket/room reservations, and banquet/room service. In contrast, the tourism industry in the AI era urgently requires compound talents with digital literacy. These new skills include proficiently using AI tools for personalized recommendations, market analysis, and decision-making based on big data, designing human-machine collaborative service processes, and managing and optimizing intelligent customer service systems.

Research indicates that current tourism graduates generally lack the ability to process unstructured data, understand algorithmic logic, and collaborate effectively with intelligent systems, leading to inadequacy when facing emerging positions like smart scenic area management, AI-driven marketing strategies, or virtual tourism product development<sup>[1-2]</sup>.

### **2.2. Outdated teaching curriculum system**

The existing curriculum syllabus for tourism management majors is still dominated by traditional theories, lacking systematic coverage of key areas such as tourism big data analysis, principles of intelligent recommendation algorithms, applications of generative AI (AIGC) in cultural and tourism content creation, and interactive design for tourism metaverses. This knowledge gap prevents students from understanding, let alone applying, AI tools to reshape the tourism value chain. While the industry widely uses AI for itinerary planning, intelligent customer service, and personalized recommendations, the educational side is still in the exploratory stage when it comes to deeply integrating AI tools into teaching and cultivating students’

“human-machine collaboration” abilities. The outdated curriculum content is a direct cause of graduates’ “learned knowledge being inapplicable”<sup>[3-4]</sup>.

### **2.3. Practical teaching disconnected from industry frontiers**

The practical teaching components of tourism management majors have also failed to keep pace with the development of new tourism formats. First, the selection of sites for concentrated internships or other practical teaching activities is still limited to traditional travel agencies, hotels, and scenic areas, lacking deep collaboration with AI tourism platforms and innovative enterprises specializing in cultural and tourism technology. Students are not exposed to real-world AI application scenarios during practical teaching, and this practical teaching environment cannot cultivate students’ ability to solve complex, dynamic digital problems. Secondly, although industry-education cooperation is widespread, much of it remains at the level of superficial internships or framework agreements. Resources from both industry and academia often remain isolated, and industry needs and existing teaching resources are not effectively communicated with the teaching side.

### **2.4. Students’ career perceptions are severely narrowed**

Influenced by traditional educational models, students’ understanding of tourism careers remains confined to roles like “tour guiding”, “room booking”, and “selling tour packages.” They have not yet developed identification with new professional roles such as “tourism experience architect”, “AI tourism service trainer”, and “cultural tourism content curator.” This cognitive limitation not only restricts students’ career development prospects but also hinders the entire industry upgrading and transformation towards high-value-added, technology-intensive directions<sup>[5-6]</sup>.

## **3. The necessity of reconstructing the tourism talent cultivation system in the AI era**

The essence of the aforementioned dilemmas is a fundamental conflict between the standardized, assembly-line talent cultivation logic of the industrial era and the personalized, intelligent, innovation-driven industry demands of the AI era. In the context of artificial intelligence profoundly reconstructing the tourism industry ecosystem, the speed of technological iteration far exceeds the responsiveness of the education system. The structural mismatch between industry demand and talent supply has reached a critical point, with over 70% of tourism industry executives believing that current graduates lack core competencies for handling AI-driven business scenarios, such as data interpretation, human-machine collaboration, and algorithmic ethical judgment<sup>[6]</sup>. Without reform, the education sector will continue to supply “structurally redundant” talent to the market, further exacerbating the supply-demand imbalance in the job market.

Therefore, it is imperative to initiate a systemic reform from the top-level design, encompassing the reconstruction of the professional knowledge curriculum system, deep integration of industry and education, and the internalization of education on professional identity.

## 4. Strategies for reconstructing the tourism management talent cultivation system based on AI integration

### 4.1. Reconstruction of the tourism management curriculum system integrated with AI technology

The transformation of the tourism sector by AI is no longer superficial; it has deepened from isolated tool applications into a systemic transformation that permeates the entire industry chain: The application of tourism big data tools enables market trend prediction, customer behavior insight, and operational optimization through deep mining and analysis; Constructing entity-relationship graphs centered on tourism products enables the structured representation of complex, heterogeneous tourism data and reasoning predictions based on them; Generative AI, represented by Large Language Models (LLMs), is revolutionizing tourism planning and content creation.

Based on the above industry transformations, integrating corresponding skills into the tourism management education curriculum system, pursuant to the cultivation goal system, can be divided into four mutually supportive levels, as shown in **Table 1**.

**Table 1.** AI skills and corresponding cultivation goals

Skill Level	Corresponding Cultivation Goal	Core Skill Module	Specific Skill Content	Industry Application Scenarios
Foundation Layer	Primary Goal	Data Analysis Fundamentals	Python Programming, Data Cleaning & Visualization, Descriptive Statistics	Analytical Reports, Tourist Persona Profiling
Core Layer	Intermediate Goal	Machine Learning Application	Principles and Applications of Classification, Clustering, Regression, Recommendation Algorithms	Customer Segmentation, Demand Prediction, Personalized Tourism Product Recommendation
Advanced Layer	Intermediate Goal	Knowledge Graph Technology	Entity-Relation Extraction, Graph Database Query	Intelligent Q&A System, Tourism Product Recommendation
Ethics Layer	Advanced Goal	AI Ethics and Governance	Data Privacy, Algorithmic Fairness, Assessment of Technology's Social Impact	Ensuring Responsibility and Sustainability of AI Applications

### 4.2. Construction of a multi-level innovative education practice platform

In the context of artificial intelligence technology reshaping the tourism industry landscape, building a sustainable industry-education integration mechanism is the core link of the tourism management talent cultivation system reform. In the AI era, internships and practice should transcend traditional service positions, integrating into new scenarios such as smart scenic area management, tourism big data analysis, and AI itinerary planning, allowing students to personally experience the industry's charm and personal growth potential empowered by technology <sup>[7]</sup>. Therefore, constructing an AI-based innovative practice platform for tourism management majors, forming a multi-level architecture from basic skill training to comprehensive innovative application, is necessary to cover the entire cycle of student competency growth.

This platform was established by leveraging the framework of a College of Modern Tourism Industry. Modern tourism industry colleges can overcome the limitations of shallow engagement found in traditional university-industry collaboration, allowing tourism enterprises to deeply participate in key teaching links such as talent cultivation plan formulation, curriculum development, and practice base management. Through

the parties concerned signing the cooperation agreements, clarifying the rights and responsibilities of “government-enterprise-school” in equipment investment, teacher appointment, the allocation of intellectual property rights from research, etc., deep coupling of the education chain, talent chain, with the industry chain, and innovation chain can be achieved. Pursuant to this framework, practical AI applications in tourism companies can be converted into powerful teaching resources and deepen the integration of industry and education.

### **4.3. Synergy between professional identity education and lifelong learning ability**

Against the backdrop of AI profoundly reshaping the tourism industry ecosystem, the cultivation of professional identity among tourism management students faces unprecedented opportunities and challenges. Professional identity not only affects students’ learning engagement and academic achievement but also directly relates to their future career choices and industry loyalty.

Based on the structural dimensions of professional identity, a multi-level and multi-dimensional professional identity education system needs to be constructed:

**Deepening Industry Development Cognition:** Invite executives from AI tourism enterprises and technical heads of smart scenic areas to conduct an address, showcasing practical application scenarios of AI technology in tourism. Organize students to visit smart tourism demonstration projects, enhancing intuitive cognition of industry transformation through field research.

**Changing Professional Evaluation Cognition:** Addressing preconception issues such as social evaluation and professional bias, inviting successful alumni in the field of AI tourism to share their growth experiences, and using role models to improve students’ perceptions of the tourism major and the tourism industry.

**Internalizing and Shaping Value Systems:** Through practice projects with social value, integrate value education on business integrity, social responsibility, cultural heritage, and technological ethics while students learn knowledge and skills, enabling them to deeply appreciate the social significance of working in tourism, thereby internalizing positive professional values.

**Constructing a Lifelong Learning Ability: Cultivation Mechanism:** Lifelong learning is a core strategy for tourism industry practitioners to maintain competitiveness and adapt to rapid digital transformation and sustainable development needs. Tourism management education must transcend traditional knowledge transmission models, constructing a systematic lifelong learning ability cultivation system that includes structured training mechanisms for self-directed learning ability and training mechanisms for industry change perception ability.

## **5. Conclusion**

In the era where artificial intelligence is profoundly reshaping the tourism industry, the urgency for fundamental reform of the undergraduate talent cultivation system in tourism management drives the necessity for a paradigm shift in tourism management education from “knowledge transmission” to “high-order competency cultivation.” Through systematic reform driven by the four aspects of the curriculum system, practical teaching, identity education, and lifelong learning, new compound talents capable of harnessing AI technology, identifying with professional values, and leading the future development of the industry can be cultivated.

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## Disclosure statement

The authors declare no conflict of interest.

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