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# AI-Empowered Teaching Reform and Practice of the Flipped Classroom in Tourism Education: A Case Study of the "Tourism Destination Management" Course

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**Abstract: Driven by AI technology, traditional tourism flipped classrooms will face numerous challenges. This study analyzes the problems existing in traditional blended learning within tourism flipped classrooms and proposes teaching reform ideas that integrate online resource libraries, innovate the "pre-class + in-class + after-class" flipped classroom model, and enhance teaching evaluation through multiple dimensions. Taking the course "Tourism Destination Management" as an example, teaching practices are carried out by incorporating AI concepts and technologies into the course's training objectives, teaching content, teaching design, and teaching evaluation, with the aim of improving the quality of tourism flipped classroom instruction.**

**Keywords: AI Empowerment; Flipped Classroom; Tourism Education; Teaching Reform And Practice; "Tourism Destination Management" Course**

## 1. Introduction

The tourism industry has become a frontrunner in the application of artificial intelligence technology, with numerous intelligent interactive applications in cross-sector collaboration and scenario innovation, such as AI empowering tourism project development and design, and creative tourism marketing [1]. Artificial intelligence drives the development of the tourism industry. Essentially, the disruptive and cutting-edge technologies of AI foster new business forms, new models and new driving forces in tourism [2]. For instance, the integrated application of generative AI with advanced technologies such as big data, the Internet of Things, blockchain, virtual reality and augmented reality can reshape new immersive consumer spaces for culture and tourism [3]. The rapid development of artificial intelligence has reshaped the operational models and talent demands of the tourism industry, posing new challenges to the paradigm of tourism education and teaching innovation [4].

The flipped classroom is an innovative teaching model that follows the process of student self-study before class, teacher in-depth instruction during class, and assessment and consolidation after class [5].

Driven by AI technology, however, traditional flipped tourism classrooms will face many challenges, as students have more channels to access vast learning resources and engage in creative tourism practices. The changes of the times and the industry urgently require higher education institutions to actively promote the deep integration of artificial intelligence and tourism education in curriculum development. The "Tourism Destination Management" course aims to equip students with a systematic understanding of tourism destination planning, development, operation, and sustainable development capabilities, cultivating them into versatile talents who meet industry demands. Therefore, this study takes the "Tourism Destination Management" course as an example to implement teaching reforms, introducing AI concepts and technologies. This approach can both construct personalized learning models for students and enhance their ability to solve practical problems in the tourism industry.

## 2. Problems Existing in Tourism Flipped Classrooms Based on Traditional Blended Teaching

### 2.1 The Tourism Flipped Classroom Lacks Higher-order Thinking and Innovation

The construction of the New Liberal Arts has endowed undergraduate tourism courses with the nature of "high-quality courses", meaning that talent cultivation and course objectives are

characterized by higher-order thinking, teaching content and methods by innovation, and course design and assessment by challenge degree [6]. Although online-offline integrated tourism flipped classrooms have improved student participation and enthusiasm, they have failed to organically integrate AI technology, and still suffer from insufficient higher-order thinking in teaching objectives and inadequate innovation in teaching models.

Firstly, pre-class learning resources are relatively monotonous, usually in the form of PPT, videos, and PDFs, lacking intelligent recommendation, knowledge graph navigation, and systematic summarization. Secondly, pre-class learning mostly stays at the level of basic knowledge such as concepts and descriptions of tourism phenomena, without sufficient guidance for cultivating higher-order abilities including analysis, evaluation, and creation. Thirdly, the depth of in-class flipping is insufficient; restricted by the classroom environment, students can hardly complete relatively complex flipped tasks during class.

With the support of AI technology, teachers can innovate teaching methods through scenario simulation, virtual simulation, image or video generation, and other approaches. For instance, in the chapter "Tourism Destination Safety Management", tools such as ChatGPT, DeepSeek, and Kimi can be used to simulate tourist complaint dialogues, thus innovating interactive forms.

### 2.2 Limited Spatiotemporal Expansion of Teaching Content

In blended teaching, curriculum resources are confined to content pre-built by teachers. The update cycle of instructional videos is relatively slow, and teaching content often lags behind the development of the tourism industry [7]. Within limited teaching time, how teachers can efficiently deliver complex knowledge systems, introduce up-to-date teaching cases, and ensure students' comprehensive mastery and flexible application constitutes the primary issue to be addressed in classroom instruction [8]. In contrast, AI-empowered classroom teaching features the dynamic interaction among four elements: teachers, students, AI-generated content, and massive resources. Scenarios such as VR experiences in scenic spots, AR exhibitions in museums, and intelligent voice robots in tourist attractions have become ubiquitous. Accordingly, teachers can update digital human teaching videos via AI technology, supplement the latest tourism cases, and create a scenario-based and interactive teaching environment through real-scene simulation and virtual tours, so as to expand the spatiotemporal scope of the tourism flipped classroom.

### 2.3 Insufficient Personalized Learning for Students

Under the classroom teaching system, teachers focus on teaching progress and students' overall mastery. However, individual differences exist in students' grasp of pre-class learning content, leading to disparities in participation and comprehension in offline flipped classrooms, making it difficult to meet students' personalized learning needs [9].

In the AI-empowered tourism flipped classroom, the core concept of "student-centeredness" should be upheld, emphasizing that students are the subjects of the learning process and active constructors of meaning. Currently, some online teaching platforms have provided AI intelligent assistants that can analyze students' learning data and offer functions such as resource retrieval and learning Q&A. Teachers can take full advantage of these intelligent assistants to recommend corresponding learning materials for students, such as exercises and cases at different difficulty levels. Students can also upload difficult questions and ask for teachers' assistance, so as to realize personalized guidance and evaluation.

### 2.4 Teachers' Artificial Intelligence Literacy Needs to Be Improved

Against the background of the rapid development of artificial intelligence, the tourism industry is undergoing digital transformation, with extensive application of new technologies such as smart tourism, big data analysis, and virtual reality (VR) tour guiding. However, the overall level of artificial intelligence literacy among tourism teachers remains insufficient, and they lack exploration of cutting-edge tools including generative AI. Although universities have strengthened training on AI concepts and technologies, the content is still overly theoretical, with little practical guidance on how to apply artificial intelligence to teaching scenarios. Moreover, most tourism teachers have a background in humanities and social sciences, lacking knowledge in computer

science and big data computing. Therefore, they still face certain difficulties in effectively integrating AI technology into classroom teaching.

## 3. Ideas for Teaching Reform of AI-Empowered Tourism Flipped Classroom

### 3.1 Integrate Online Resource Libraries and Reconstruct Teaching Content

AI technology enables teachers to conveniently realize the dynamic optimization of teaching content. Firstly, by taking advantage of AI data analysis and algorithms, frontier professional knowledge and the latest industry development in tourism can be captured, so as to selectively adjust teaching chapters and content. Secondly, a course knowledge graph can be constructed by crawling and cleaning multi-source teaching resources such as texts, videos and question banks. Thirdly, emphasis should be placed on cultivating students' AI literacy. In case teaching, analyses of AI-empowered tourism scenarios should be included, such as intelligent customer service in scenic spots, AI-based itinerary planning on tourism OTA platforms, and tourist behavior prediction, enabling students to realize that future tourism employment positions require compound capabilities of "professional knowledge + AI".

### 3.2 Innovate the "Pre-Class + During-Class + Post-Class" Flipped Classroom Model

In micro-lecture-based flipped classrooms, knowledge transmission and consolidation are completed before or after class via online teaching platforms, while knowledge construction and internalization are achieved in class under the guidance of teachers and with the assistance of peers [10]. With the integration of AI technology, the original flipped teaching model of "pre-class preview + in-class flipping + post-class improvement" will be transformed into a new model featuring "pre-class personalized guidance + in-class collaborative interaction + post-class intelligent Q&A", as shown in Figure 1.

In the pre-class personalized guidance stage, teachers use AI technology for intelligent lesson preparation, update the original teaching content, and upload it to the established online teaching platform. According to students' learning conditions, teachers generate personalized preview tasks, and students log into the platform to complete the assigned tasks. Based on the preview data fed back by the platform, teachers can grasp the overall and individual learning status of the class. Some online teaching platforms provide massive curriculum resources, allowing students to generate course knowledge graphs according to their own needs.

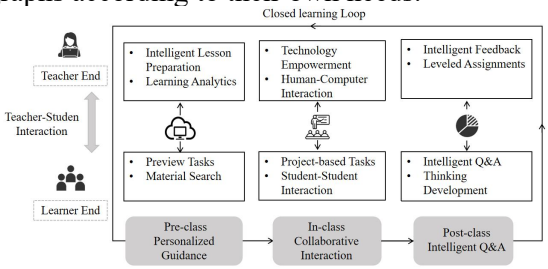


**Figure 1. AI-Empowered Innovation in Flipped Classroom Model**

In the in-class collaborative interaction stage, the empowerment of intelligent technologies makes the "human-computer interaction, teacher-student interaction, and student-student interaction" more convenient [11]. Virtual simulation technology and text-to-video technology enrich the three-dimensional presentation of teaching resources in the tourism flipped classroom. Both teachers and students can realize "human-computer interaction" through software interfaces on computers and mobile devices. Project-based tasks promote exploration, collaboration and co-creation among students, achieving "student-student interaction" and improving students' higher-order thinking abilities. Based on data and in-class discussions, teachers shift from lecturers to guides, addressing high-level problems in the course and realizing "teacher-student interaction".

### 3.3 Multi-Dimensional Data Analysis for Improved Teaching Evaluation

AI technology enables the analysis of student learning conditions and learning outcomes. Teaching evaluation can be conducted in the following aspects: First, evaluate students' online learning autonomy. By collecting learning data from online teaching platforms and quantifying student engagement, teachers can provide learning feedback to students based on their actual performance. Second, evaluate students' learning outcomes. Natural language processing technology enables textual and semantic analysis of discussion content, open-ended responses, assignments, and other materials, assisting teachers in understanding

and assessing students' critical thinking, innovative ability, and other competencies. Third, revise teaching resources. Based on students' learning data and exercise performance, the difficulty and types of questions can be adjusted, and hierarchical question design and teaching strategies can be implemented, providing technical support for teachers to reflect on and optimize instruction.

## 4. Teaching Practice of AI-Empowered Flipped Classroom in Tourism Destination Management

### 4.1 Adding AI Literacy Objectives to Course Training Goals

Against the backdrop of new scenarios and technologies, the integration of artificial intelligence and tourism destinations is profoundly transforming tourist experiences and industrial operation models. However, the current textbook of Tourism Destination Management is highly theoretical with a relatively fragmented knowledge structure, and its teaching objectives mainly focus on knowledge and ability cultivation without integrating AI literacy. Therefore, it is necessary to reorganize teaching objectives and the curriculum system, and add objectives and contents for AI literacy cultivation. The goal of tourism AI literacy includes not only the ability to proficiently master various digital technologies, but also the capacity to innovatively solve professional problems in the tourism industry through technological applications.

Taking Chapter 1 "Introduction to Tourism Destination Management" as an Example to Revise Teaching Objectives with AI

[Issuing Instructions] The content of the first lesson of Tourism Destination Management is "Introduction to Tourism Destinations", which mainly introduces the practical scenarios of the integration of tourism destinations and artificial intelligence. The learning objects are sophomore students majoring in Tourism Management. Based on this, please write the teaching objectives of this course from the perspectives of knowledge, ability, and digital literacy.

[DeepSeek's Response] a) Knowledge Objectives: Understand the core components and management framework of tourism destinations; master the typical application scenarios of artificial intelligence (AI) in tourism destinations; be familiar with benchmark cases of AI integration in tourism destinations at home and abroad. b) Ability Objectives: Be able to analyze the impact of AI technology on the operational efficiency of tourism destinations and tourist experiences; interpret destination management issues based on data (such as optimizing scenic spot routes through heat maps). c) Digital Literacy Objectives: Establish AI ethics awareness; master basic digital tools; develop technology-driven critical thinking.

[Issuing Instructions] Please analyze the key and difficult points of this lesson based on the above teaching objectives.

[Revisions Based on DeepSeek's Response] The key teaching points include three aspects: a) The core integration scenarios of AI and tourism destinations. Students need to establish an intuitive understanding of the implementation of AI technology, which is the foundation for subsequent analysis and application. b) In-depth analysis of typical cases. Cases serve as a bridge connecting theory and practice, helping students understand how technology solves practical problems. c) The infiltration of AI ethics and digital literacy, avoiding students from falling into "technological omnipotence" and cultivating a responsible management mindset.

The difficult teaching points include three aspects: a) Popularized explanation of technical principles. Students majoring in tourism management generally lack a computer background, so the accumulation of professional terms should be avoided. b) Integrated application of interdisciplinary abilities. Students need to understand both tourism management needs and AI technology logic, which easily leads to the situation of "understanding scenarios but not technology, or understanding technology but not scenarios". c) Cultivation of critical thinking. Students may over-rely on technology and neglect the training of their own critical thinking.

With the help of generative AI, teachers can pre-construct a teaching syllabus and then revise it according to students' learning conditions and curriculum characteristics. AI's ability to integrate information such as text, images, audio, and video can save teachers a lot of time and energy.

### 4.2 Integration of Artificial Intelligence Content into Teaching Chapters

The transformative development of the tourism industry and the emergence of new business formats have imposed new requirements on the construction and management of tourism destinations. Consequently, the course content must closely align with the actual development of the tourism industry. To this end, the latest trends and hot topics in the current operation of tourism destinations are introduced in each chapter (see Table 1).

**Table 1. Integration of AI Literacy into the Course Chapters of "Tourism Destination Management"**

| Course Chapters | AI Literacy | AI Teaching Design |
|---|---|---|
| Chapter 1: Introduction to Tourism Destinations | Topic Discussion: Who could become the DeepSeek of the tourism industry? | Demo: Demonstrate the smart assistants on OTA platforms such as Ctrip and Mafengwo. |
| Chapter 2: Theories and Methods of Tourism Destination Management | Research Project: Predict the life-cycle stage of a selected tourism destination based on historical data, and evaluate the factors that may influence it. | Task: Guide students to use tools like DeepSeek or Doubao to collect historical visitor data and create charts for lifecycle analysis. |
| Chapter 3: Tourism Destination Development and Planning | Knowledge Presentation: Use virtual reality technology to showcase natural and cultural attractions. | Task: Students log on to the scenic spot panoramic VR display website to examine the application of VR technology. |
| Chapter 4: Spatial Layout and Project Planning of Tourism Destinations | Case Analysis: Use geographic data and resource location maps to design the spatial layout of a tourism area with the help of image generation technology. | Task: Generate tourism planning maps using AI image generation tools. |
| Chapter 5: Service Management at Tourism Destinations | Discussion: How can AI-powered Q&A technology improve tourist complaint management? How can travel itineraries be personalized based on visitor preferences? | Task: Compare complaint responses and itinerary customization features on DeepSeek, Doubao, and OTA platforms, and explore how AI can enhance tourist services. |
| Chapter 6: Tourism Destination Signage Systems | Case Analysis: "Ai Wenwen," the virtual digital human at the National Museum of China. | Task: Guide students to create digital virtual humans and generate a scenic spot commentary video. |
| Chapter 7: Visitor Flow Management at Tourism Destinations | Topic Discussion: Use historical data to forecast tourist flow during Golden Week holidays. | Task: Ask students to search for Golden Week visitor data using DeepSeek, Doubao, etc., and make predictions based on the data. |
| Chapter 8: Tourism Destination Image Positioning and Methods | Case Analysis: Design a tourism destination slogan and logo based on online reviews or travel blogs. | Task: Students obtain tourist comments through web crawler software, and use software such as ROST and NVIVO to extract high-frequency words, based on which they design tourism destination slogans and images. |
| Chapter 9: Tourism Destination Marketing | Topic Discussion: "Recommended for You"—How does AI recommend niche attractions based on user preferences? | Task: Choose one tourism destination and compare its marketing content, engagement, and readership across different channels.v |
| Chapter 10: Safety Management at Tourism Destinations | Case Analysis: How does Jiuzhaigou Scenic Area manage tourist capacity using AI? | Insights: The application of Jiuzhaigou Scenic Area's "digital twin system" and its implications for other popular scenic spots. |
| Chapter 11: Future Trends in Tourism Destinations in the New Era | Topic & Case Discussion: Explore new scenarios where tourism destinations integrate with AI. | Task: Analyze the digital technologies behind 20 immersive new business models released by the Ministry of Culture and Tourism. |

### 4.3 Embedding Human-Machine Collaboration in Instructional Design

The implementation of a tourism flipped classroom relies on sound instructional design and practice. Generative pre-trained models represented by DeepSeek can generate multimodal content according to human instructions, facilitating teachers' instructional design.

Taking Chapter 8 "Tourism Destination Image Positioning and Methods" as an example, AI is applied to instructional design across the pre-class, during-class, and post-class stages.

4.3.1 Pre-class Personalized Guidance

First, four course objectives are delivered to

students: knowledge, ability, literacy, and ideological-political education. At the knowledge level, students understand the definition and components of tourism destination image. At the ability level, students are able to redesign the tourism image and slogan for a given destination. At the literacy level, students improve their abilities in textual data mining, AI image generation, and copy creation. In terms of ideological-political education, interpreting tourism destination images of different provinces and cities helps students recognize that an excellent tourism image can enhance tourist perception.

Second, pre-tests and preview tasks are assigned. The pre-test measures students' familiarity with the tourism images and slogans of various provinces and cities (see Figure 2). For the preview task, students are required to watch the teacher's micro-lecture video, understand the concept and components of destination image, master image analysis tools, and reflect on how to analyze and design a tourism destination's image using software.


**Figure 2. Tourism Image Logos of Various Provinces (Partial)**

4.3.2 In-class Collaborative Interaction

In-class collaborative interaction is mainly conducted in the classroom, relying on smart terminals such as mobile phones and computers to realize multi-party interaction.

The first stage is knowledge internalization and improvement. The teacher spends about 20 minutes answering common questions from the pre-class preview tasks, and explains the differences and relationships among three pairs of dimensions: cognitive image-affective image, projected image-emitted image, and organic image-induced image-complex image.

Next, students work in groups to complete a tourism destination image analysis task lasting approximately 80 minutes. They collaboratively finish a series of steps: becoming familiar with relevant software, selecting a tourism destination, collecting tourist travel notes, conducting textual data analysis, analyzing high-frequency words, and generating word clouds. During this process, the teacher provides on-site guidance, answers questions, and instructs students on how to perform textual analysis using software tools.

The final stage is presentation and summary, taking about 20 minutes. Student groups present their findings, summarize the differences between the perceived destination image and the official image, and put forward suggestions on whether to revise the tourism destination image.

4.3.3 Post-class Intelligent Q&A

After class, teachers assign extended assignments according to classroom performance. For example, students are required to redesign new tourism destination images and slogans with the help of AI image generation tools based on data analysis results, and submit them to the online teaching platform. Teachers evaluate the extended assignments, provide online Q&A, and grasp the overall learning progress and personalized learning needs of the class based on AI learning situation analysis.

### 4.4 Strengthening Data Analysis in Teaching Evaluation

Data can not only measure students' online learning performance but also evaluate the discussion quality of the flipped classroom, so that teachers can conduct learning outcome analysis and implement differentiated instruction.

First, analysis of students' online learning autonomy. Most online teaching platforms currently provide statistics on online learning data, such as viewing duration, test submission times, test scores, reply frequency, and Q&A performance. These data can be used to analyze students' learning engagement.

Second, student stratification with the support of AI technology. For instance, the Chaoxing Platform classifies students into the excellent group, top-performing group, diligent group, and improvement group based on their deviation from the average in learning duration and overall scores, and proposes corresponding teaching strategies, providing data support for teachers to carry out differentiated teaching.

Taking the one-semester learning situation analysis of the Tourism Destination Management course platform as an example, the following data are obtained: "Tourism Destination Management has been running stably for 213 days, with 3 classes and 129 students in total. Based on student learning data, the conclusions are as follows: the overall

student scores are widely dispersed: the highest total score is 100, the lowest is 70, the average score is 87.7, and the standard deviation is 17.11". Based on online learning data, the AI assistant intelligently analyzes students' learning status and provides corresponding data support, enabling teachers to understand the performance of each student—especially those with abnormal data—and to conduct targeted tutoring and teaching.

## 5. Conclusion

Cutting-edge technologies such as big data, cloud computing, and artificial intelligence have been integrated into tourism education with an irresistible trend, exerting a profound impact on teaching models, educational quality evaluation, teaching management, and other aspects.

Tourism education undertakes the important mission of connecting industry and talents, as well as theory and practice. From the perspective of tourism industry practice, technologies including machine learning, natural language processing, recommendation systems, and intelligent assistants have become key factors influencing tourism motivation, decision-making, and scenario construction. Future tourism talents are therefore required to possess interdisciplinary competencies. Accordingly, tourism education needs to evolve from closed education to open integration, so as to realize the integration of intelligent technologies and professional courses.

This teaching reform incorporates artificial intelligence into the tourism flipped classroom, constructing a model featuring "pre-class personalized guidance + in-class collaborative interaction + post-class intelligent Q&A". It achieves the in-depth integration of online-offline to promote the digital-intelligent transformation of traditional tourism teaching and effectively improve students' ability to analyze and solve practical problems in the tourism industry.

Taking the course Tourism Destination Management as an example, this study revises its teaching objectives, curriculum system, content, methods, and evaluation. Students are enabled to analyze multi-dimensional AI application scenarios in tourism destinations and better adapt to the digital transformation of the tourism industry.

With the continuous iteration of AI technology, application scenarios of tourism flipped classrooms will become more diverse. Teachers should embrace such changes proactively and prudently, explore ways to maintain the embodiment and interactivity of classrooms, and promote the innovative development of tourism education.

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## References

[1] Wang Jinwei, Lu Lin, Ming Qingzhong, et al. High-quality integrated development of culture and tourism in the era of artificial intelligence (AI): Key issues and scientific pathways. Journal of Natural Resources, 2026:1-22.

[2] Chen Xuan. A Study on the Mechanism of Artificial Intelligence Empowering the Development of New Quality Productive Forces in Tourism. Journal of Guiyang University (Social Sciences), 2026, 21(01):67-76.

[3] Li Hui, Zhang Mengying. Application Scenarios, Challenges and Countermeasures of Generative Artificial Intelligence Empowering High-Quality Development in the Cultural and Tourism Industry. Dongyue Tribune, 2025, 46(12):98-111+192

[4] Chen Xing. Reform of Tourism Education and Talent Training Driven by AI. Journal of Sichuan Tourism University, 2025(05):11-12.

[5] Li Shukung, Wan Jiadi. Research on Innovative Paths of Experimental Teaching Mode of Tourism Management Based on Flipped Classroom. Journal of National Universal Language and Writing Teaching and Research, 2023 (09):31-33.

[6] Huang Zhenfang, Huang Rui, Hou Guolin. The Reform of Undergraduate Curriculum and "Golden Courses" Construction in Tourism Management Specialty under the Background of New Liberal Arts. Tourism Tribune, 2020, 35(10):83-95.

[7] Zhou Xiao, Li Jinhong. Exploration of Integration Artificial Intelligence into Teaching Reform for the Course Big Data Analytics in Tourism. Education and

Teaching Forum, 2025(34):69-72.
[8] Liao Wenjuan. Research on Classroom Teaching Reform and Innovation of Tourism-Related Majors Promoted by AI Technology. PR International, 2024(20):164-166.
[9] CHEN Changyu, LI Ming, LUO Lijia. Construction of Personalized Learning Model Based on Artificial Intelligence. Journal of Chongqing University of Education, 2021, 34(03):118-121.
[10] Liu Rui, Wang Haiyan. The Design and Practice of “Flipped Classroom” Teaching Model Based on Micro-lesson. Modern Educational Technology, 2014, 24(5):26-32.
[11] Moore Gary C, Benbasat Izak. Development of an instrument to measure the perceptions of adopting an information technology innovation. Information Systems Research, 1991, 2(3):192-222.