

A Comparative Study on the Learning Effects of Offline, Online and Blended Teaching Modes

Shaojun Ji¹, Fangfang Shi^{2, *}

¹Tourism College, Beijing Union University, Beijing 100101, China

²Surrey International Institute, Dongbei University of Finance and Economics, Dalian 116025, China

* Corresponding author: fangfang_shi@hotmail.com

Abstract: This study comparatively analyzes the learning effects associated with offline, online, and blended teaching modes within a tourism program. The findings suggest that offline instruction is particularly effective in promoting real-time interaction, hands-on practice, and collaborative learning. In contrast, online modes provide flexibility and accessibility but often face challenges in maintaining student engagement and fostering critical thinking skills. Blended learning is identified as a balanced approach, combining asynchronous online components such as AI-driven adaptive quizzes and virtual discussions with structured offline workshops to accommodate diverse learning preferences. Although blended teaching demonstrates adaptability in integrating theoretical knowledge with practical application, its effectiveness depends on overcoming barriers to establish inclusive, learner-centered environments that uphold the indispensable role of human mentorship in nurturing creativity and problem-solving abilities.

Keywords: Students' learning effects; offline teaching; online teaching; blended teaching.

1. Introduction

The rapid development of digital technologies have catalyzed a paradigm shift in higher education, with blended learning emerging as a pivotal element of pedagogical innovation [1]. In disciplines such as tourism management, where the integration of theoretical knowledge and practical skills is crucial, the adoption of blended learning has received significant attention, particularly in courses requiring industry engagement, such as destination marketing and hospitality management. Nevertheless, despite its increasing prevalence, the effect of blended learning compared to purely offline or online teaching remains insufficiently explored in tourism education, a field uniquely challenged by its dependence on real-world application, interpersonal skill development, and rapidly evolving industry standards.

Existing research on teaching modes has predominantly concentrated on STEM disciplines and language education, where standardized outcomes such as test scores or technical proficiency are more readily quantifiable. For example, studies in engineering education indicate that blended approaches enhance problem-solving skills through flipped classrooms [2], while language learning research underscores the role of online platforms in improving vocabulary retention [3]. In contrast, tourism education requires a nuanced balance of cognitive mastery, procedural skills, and affective competencies, which are inherently context-dependent and resistant to one-size-fits-all pedagogical solutions.

Blended learning may enhance educational outcomes by integrating the structured interactivity of face-to-face instruction with the scalability of digital tools. However, there is a paucity of studies that compare offline, online, and blended learning modes, particularly through qualitative methodologies in the context of tourism education. This study seeks to address these gaps by conducting a comparative analysis of learning effects across offline, online, and blended modes within higher education in tourism. Utilizing semi-

structured interviews with 21 undergraduate students specializing in tourism, the study analyzes the strengths and limitations of each instructional mode, providing evidence-based recommendations for curriculum designers and policymakers navigating the post-digital educational landscape.

2. Literature Review

2.1. Blended Teaching

Blended teaching, as an educational paradigm, integrates online and offline modes by combining the flexibility of digital tools with the interactivity of traditional classroom settings [4]. The efficacy of blended teaching has been extensively examined across various disciplines. It enhances flexibility by enabling self-paced learning through asynchronous modules while maintaining face-to-face interaction for collaborative activities like role-playing simulations. This multimodal approach accommodates diverse learning styles, thereby enhancing engagement and knowledge retention. Furthermore, blended learning models democratize education by providing access to high-quality digital resources, which can help bridge the educational divide between urban and rural areas [5]. Personalized feedback mechanisms, which integrate automated assessments with instructor-led guidance, further enhance critical thinking and the application of skills [6]. However, blended teaching is heavily reliant on technology, posing challenges for regions with limited internet connectivity or insufficient devices. Additionally, student self-discipline is essential, as online components may lead to distractions in the absence of direct supervision [7]. Instructors are also required to master both pedagogical and technological competencies, necessitating institutional support for training.

In the context of tourism education, blended teaching effectively addresses the dual demands of theoretical rigor and industry-relevant skills. For instance, virtual reality simulations of hotel management scenarios, when combined

with onsite internships, have demonstrated efficacy in bridging the gap between theoretical knowledge and practical application [8]. The integration of digital tools, such as augmented reality reconstructions of cultural heritage sites and AI-driven adaptive quizzes, has significantly enhanced both motivation and the depth of learning. These innovations are consistent with constructivist principles, wherein learners actively reconstruct knowledge through hybrid interactions.

2.2. Learning Effects under the Blended Teaching Mode

The learning effects in blended teaching environments are influenced by several factors. Firstly, pedagogical design is crucial. Courses that effectively integrate online pre-learning components (such as video lectures) with offline application activities (such as case studies) tend to exhibit higher retention rates [9]. For instance, flipped classrooms in tourism marketing courses have enabled students to apply theories of destination analytics to real-world itinerary planning workshops, leading to improved performance in practical tasks [10]. Secondly, the efficacy of technological integration is critical. While platforms can facilitate collaborative problem-solving, their success is contingent upon user familiarity and institutional support [11]. Thirdly, student autonomy plays a significant role in influencing outcomes. Although self-paced online modules accommodate diverse learning styles (such as auditory and visual), they necessitate strong self-regulation skills, which are often underdeveloped in resource-constrained settings. Fourthly, inadequate synchronization between online and offline components can result in cognitive overload, as evidenced in tourism programs where students faced difficulties in balancing virtual reality simulations with fieldwork deadlines [12]. These challenges highlight the necessity for context-specific adaptations. Generally, blended teaching represents a dynamic equilibrium between innovation and tradition, with its success dependent on thoughtful design, technological support, and alignment with disciplinary requirements.

3. Methods

This study utilized semi-structured interviews to examine undergraduate tourism students' perceptions of learning effects across offline, online, and blended teaching modes. The interview guide comprised three sections: (1) cognition and preference (e.g., perceived advantages of different modes), (2) learning experience (e.g., challenges in a blended teaching environments), and (3) learning effects (e.g., skill development outcomes). The questions were open-ended to allow flexibility while maintaining alignment with the study's objectives, such as, "Can blended teaching enable you to achieve better learning outcomes compared to pure offline teaching or online teaching?" A total of 21 undergraduate students from a tourism program at a Chinese university were recruited as interview participants, including 10 males and 11 females aged 18 to 20. The interviews were conducted between October 10 and December 23, 2022, with each session lasting between 45 and 90 minutes.

4. Results

4.1. Cognition and Preference

The findings (see Table 1) revealed diverse patterns in students' engagement with online learning modes and

platform preferences. In terms of online learning methods, live streaming and recorded online classes emerged as the most frequently utilized approaches, as reported by all participants. Live streaming was particularly valued for its real-time interaction with instructors and peers, especially in courses requiring immediate feedback, such as exhibition venue planning. Conversely, recorded online classes were deemed suitable for courses with theoretical content, such as macroeconomics, although some participants noted challenges in maintaining focus during asynchronous sessions. Virtual community discussions, although less common (57%), were praised for fostering collaborative problem-solving in tasks such as destination marketing case studies.

Regarding teaching platforms, the platforms including Rain Classroom, Lanmo Cloud Class, classroom online, and Enterprise Wechat were universally utilized, with a 100% adoption rate, as mandated by the university. China University MOOC (62%) was preferred for structured, discipline-specific courses, such as tourism marketing planning. Notably, the choice of platform was aligned with pedagogical objectives: interactive platforms like Rain Classroom were utilized for skill-based learning, whereas content-intensive systems like China University MOOC facilitated theoretical comprehension. However, 63% of respondents experienced platform fatigue due to fragmented digital toolkits. These findings highlight the necessity for strategic alignment among platform capabilities, learning objectives, and user experience design in tourism education.

Regarding experiences with blended teaching, all participants reported engagement in blended courses. One interviewee (M11) described a typical blended teaching structure: "We watched pre-recorded destination branding lectures online, then applied theories in offline workshops to design itineraries for incentive tourism routes." Nevertheless, four participants (M2, F8, F9, M8) reported limited exposure, attributing this to institutional reliance on traditional offline methods for courses such as hospitality management.

In comparing teaching modes, offline teaching was commended for fostering real-time interaction. For instance, interviewee M6 noted that role-playing scenarios, such as managing overbooking in hotel operations, were perceived as more authentic in face-to-face settings, where immediate feedback was available. However, this approach was criticized for its inflexibility in scheduling and limited access to digital resources (M1). Conversely, online teaching was appreciated for its flexibility, though it was critiqued for posing challenges related to self-regulation (M2, M4, F10). Blended teaching emerged as the preferred method among 15 participants, who agreed that it offered advantages such as time-saving online modules for tourism economics and offline case studies that enhanced practical skills (M3). Interviewee M7 highlighted his adaptability to the blended teaching model. He stated that "Flipped classrooms allow me to learn theory at my own pace and then engage in class debates on sustainable tourism policies." Nonetheless, six participants (M1, M5, M6, M8, F2, F5) reported challenges such as "cognitive overload from managing multiple platforms" (F6).

Table 1. Methods of online learning and online learning platforms

No.	Methods of online learning				Online learning platforms			
	Live streaming	Recorded online class	Virtual community discussion	Rain classroom	China University MOOC	Lanmo Cloud Class	Classroom Online	Enterprise wechat
M1	✓	✓	✓	✓		✓	✓	✓
M2	✓	✓	✓	✓	✓	✓	✓	✓
M3	✓	✓		✓		✓	✓	✓
M4	✓	✓		✓	✓	✓	✓	✓
M5	✓	✓	✓	✓	✓	✓	✓	✓
M6	✓	✓	✓	✓		✓	✓	✓
M7	✓	✓		✓	✓	✓	✓	✓
M8	✓	✓	✓	✓	✓	✓	✓	✓
M9	✓	✓		✓		✓	✓	✓
M10	✓	✓	✓	✓	✓	✓	✓	✓
F1	✓	✓		✓	✓	✓	✓	✓
F2	✓	✓		✓	✓	✓	✓	✓
F3	✓	✓	✓	✓	✓	✓	✓	✓
F4	✓	✓		✓		✓	✓	✓
F5	✓	✓	✓	✓	✓	✓	✓	✓
F6	✓	✓	✓	✓	✓	✓	✓	✓
F7	✓	✓	✓	✓		✓	✓	✓
F8	✓	✓		✓		✓	✓	✓
F9	✓	✓	✓	✓	✓	✓	✓	✓
F10	✓	✓	✓	✓		✓	✓	✓
F11	✓	✓		✓	✓	✓	✓	✓

4.2. Learning Experience

Students expressed diverse preferences for interaction modes. Interviewees M2, M4, and M7 emphasized the importance of offline classroom discussions for dynamic debates, such as negotiating tourism project budgets in Tourism Economics, where “real-time feedback sharpens critical thinking” (M7). In contrast, interviewees M3 and M9 expressed a preference for virtual group collaboration through digital platforms, highlighting its effectiveness in cross-cultural destination marketing simulations. Interviewee M5 commended the use of online forums for asynchronous reflection, noting that discussing heritage conservation theories in such forums facilitated deeper contemplation prior to responding. Nonetheless, M5 also observed that overly structured online discussions appeared contrived, expressing a preference for spontaneous offline brainstorming sessions.

The interviewees identified significant challenges associated with the blended teaching approach, primarily related to technological barriers, time management conflicts, and engagement issues. Firstly, online learning distractions were identified as a major obstacle, with students such as F5 and M7 reporting the temptation of social media during asynchronous sessions, exacerbated by fragmented digital platforms that increased cognitive load. Secondly, time conflicts emerged due to the overlap of online pre-tasks (e.g., video lectures) and offline project deadlines, as reported by M4 and F11, who experienced difficulties in balancing hybrid assignments in courses such as Tourism Marketing. Thirdly, technological disparities have intensified inequities, as evidenced by F4’s observation of the rural-urban digital divide during the COVID-19 pandemic. She said that “slow

internet in my hometown delayed my virtual group project submissions, putting rural students at a disadvantage.” Furthermore, infrastructure limitations, such as unstable campus Wi-Fi during fieldwork and insufficient institutional technology support, have further impeded the seamless integration of blended learning. These challenges highlight the necessity for pedagogical coherence, equitable resource allocation, and improved platform interoperability to optimize the effectiveness of blended teaching in tourism education.

4.3. Learning Effects

A majority of participants (approximately 71%) perceived blended teaching as superior to purely offline or online modes for achieving holistic learning effects. Interviewee M3 emphasized its capacity to combine the flexibility of online self-paced modules with the immediacy of offline workshops, particularly in courses like Tourism Economics, where pre-recorded lectures facilitated foundational knowledge absorption, while in-person case studies enabled practical application. Interviewee M7 observed that blended learning modes effectively bridge the gap between theoretical knowledge from textbooks and practical real-world applications. Conversely, interviewees M2 and M8 expressed a preference for purely online learning environments, particularly for acquiring technical skills such as data analytics. They argued that self-paced MOOCs, supplemented with AI-driven quizzes, facilitate mastery without the constraints of time.

In contrast, face-to-face interactions were considered superior for developing leadership skills and resolving

conflicts. Interviewee M7 shared an experience involving a Cultural Heritage Tour Design project, where in-person discussions about stakeholder priorities necessitated “real-time negotiation and consensus-building,” thereby enhancing leadership adaptability. On the other hand, online platforms like Lanmo Cloud Class were noted for their efficiency in task delegation, though they were found lacking in emotional engagement; interviewee M11 remarked that “text-based disagreements on WeChat often escalated due to tone misinterpretation.” Blended learning approaches received mixed feedback. Interviewee F6 valued blended tools, such as augmented reality-enhanced virtual meetings, for their ability to visualize team progress. However, interviewee M3 criticized the fragmented communication that can occur across multiple platforms.

5. Discussion and Conclusion

From a cognitive and preferential standpoint, blended learning aligns well with the diverse learning styles identified in the VARK model (auditory, visual, read/write, kinesthetic) by offering multimodal instructional delivery. For example, auditory learners derive significant benefits from live-streamed lectures, whereas kinesthetic learners excel in offline workshops that simulate real-world tourism scenarios, such as crisis management role-plays. This adaptability enhances intrinsic motivation by allowing learners to engage with content through their preferred modalities, thereby reducing cognitive overload and improving knowledge retention [13]. Nonetheless, cognitive preferences also affect platform acceptance; students with strong self-regulation skills tend to favor asynchronous online modules for reviewing theoretical content, while those who rely on social interaction prioritize face-to-face discussions. In terms of learning experiences, the hybrid structure of blended learning effectively balances flexibility and interactivity [14]. Online components, including AI-powered adaptive quizzes and virtual reality simulations of heritage site management, facilitate personalized, self-paced learning [15]. For instance, gamified assessments on platforms like Rain Classroom enhance engagement by transforming abstract concepts, such as tourism policy, into interactive tasks. Conversely, offline activities, such as collaborative destination marketing projects, foster the development of soft skills, including negotiation and leadership, through real-time feedback mechanisms. In terms of educational outcomes, blended learning surpasses purely online or offline methods in achieving comprehensive results. For example, augmented reality enhanced rural tourism planning courses integrate theoretical knowledge, such as infrastructure design, with practical fieldwork, thereby promoting a deeper spatial understanding. Nonetheless, an over-reliance on automated feedback systems may inadvertently diminish critical thinking, underscoring the necessity for pedagogical coherence.

The blended teaching model in tourism education holds considerable promise for enhancing learning outcomes by incorporating flexibility, interactivity, and technological innovation. By integrating asynchronous online modules, such as AI-powered adaptive learning tools, with experiential offline workshops, this approach effectively bridges the gap between theoretical knowledge and practical application in courses like tourism economics. The educational approach accommodates a variety of learning styles, enabling self-

regulated learners to benefit from autonomous online tasks, while kinesthetic learners effectively engage through role-playing simulations and augmented reality-enhanced fieldwork. This multimodal alignment promotes deeper engagement and mitigates cognitive overload, thereby enhancing knowledge retention and problem-solving abilities. Nonetheless, blended teaching continues to encounter challenges, such as fragmented digital platforms and disparities in technological access between urban and rural areas, which impede equitable implementation. Additionally, an over-reliance on automated feedback systems may undermine critical thinking, highlighting the necessity of balancing technological tools with human-centric interactions. To optimize blended teaching, educational institutions should prioritize platform interoperability to streamline learning experiences, ensure equitable resource distribution to address infrastructural disparities, and incorporate metacognitive training to bolster self-regulated learning. Importantly, technological advancements should complement, rather than replace, the invaluable benefits of face-to-face mentorship and real-time collaborative activities. By addressing these challenges, blended teaching can be effectively enhanced. By addressing these challenges, blended learning can evolve into a sustainable pedagogical framework that empowers tourism education to cultivate adaptable, skilled professionals capable of navigating the dynamic demands of the global tourism industry.

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Corresponding author: Fangfang Shi, Surrey International Institute, Dongbei University of Finance and Economics, Dalian 116025, China.

Email: fangfang_shi@hotmail.com

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