

Pathways for the Integration of Industry and Education in Innovation and Entrepreneurship Courses of Tourism Under the Background of Digital Transformation

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Abstract: *Against the backdrop of digital technology reshaping the tourism industry patterns, in tourism education, innovation and entrepreneurship education needs to break the conventional models, and the integration of industry and education has become the core bond connecting educational supply and industry demand. Based on the new requirements for the ability of talents brought about by the digital transformation of the tourism industry, this paper analyzes the problems in the integration of industry and education in innovation and entrepreneurship courses of tourism, such as superficial collaboration, disconnection between course content and the industry, and monolithic assessment systems, explores the pathways for the deep integration of industry and education from four dimensions: establishing a “government-university-enterprise-research” collaborative mechanism, developing a modular curriculum system, building double-qualified teaching teams, and constructing practice and innovation platforms in order to provide theoretical reference and practical guidance for developing innovative and entrepreneurial talents in tourism that meet the industry demand.*

Keywords: *Digital Transformation; Tourism; Innovation and Entrepreneurship Courses; Integration of Industry and Education; Talent Development*

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1.Introduction

Digitalization is profoundly transforming the operations logic and value chain of the tourism industry. From online booking and smart guides to immersive experience and big data passenger flow regulation, digital technology has infiltrated every aspect of the tourism industry, and given rise to new business formats such as “smart tourism”, “customized tours”, and “virtual tourism”. This transformation not only requires tourism practitioners to have conventional serviceability and industry knowledge, but also demands that they master multiple ability such as the ability to use digital tools, data-driven decision-making ability, and the ability to design innovative business models [1]. However, there is a significant gap between current tourism education and industrial practice. Most innovation and entrepreneurship courses are confined to theory teaching and do not align with real scenarios in the industry. It is difficult for them to develop students’ innovation ability to solve practical problems. As a key measure to break down the barriers between education and industry, the deep implementation of industry-education integration is not only an inevitable choice for the tourism to respond to digital transformation, but also a main pathway to improve the quality of innovation and entrepreneurship education.

2.The Requirements of Digital Transformation for the Ability of Innovative and Entrepreneurial Talents in Tourism

2.1 The Ability to Use Digital Tools and Interpret Data

The digital operations of the tourism industry rely on the support from various tools and data. The operation of online travel agencies (OTA) requires practitioners to master user portrait analysis and traffic conversion strategies. The management of smart scenic spots requires practitioners to use Internet of Things (IoT) technology for passenger flow monitoring and emergency dispatch. The design of tourism products needs practitioners to use big data to identify consumer preferences. These require innovative and entrepreneurial talents not only to be proficient in using digital tools, but also to extract effective information from massive amounts of data and transform it into the basis for business decisions [2]. For instance, when designing “micro-vacation” products for young consumers, it is necessary

to analyze the data on social media and booking data to accurately identify the pain points in the requirements of the target users, and then develop products with both personalization and good user experience.

2.2 Cross-Sector Integration and Business Model Innovation Ability

Digitalization has broken the boundaries of the tourism industry, and given rise to cross-sector integrated business formats such as “tourism + culture”, “tourism + technology”, and “tourism + health care”. Taking “tourism + metaverse” as an example, some scenic areas have attempted to develop virtual tourism scenarios. Users can experience the scenery in the scenic areas in an immersive way through VR devices, and purchase virtual souvenirs and participate in virtual interactive activities at the same time, forming a linkage model of “online experience-offline consumption”. This requires innovative and entrepreneurial talents to possess cross-sector mindset, be capable of integrating resources and technologies from different sectors, and design innovative business models that meet the market demand [3].

2.3 Dynamic Adaptability and Problem-Solving Ability

Amidst the digital transformation, the market environment and technology application are undergoing rapid changes in the tourism industry. Consumer demand is shifting from “standardization” to “personalization”. The iteration speed of technology is constantly accelerating (such as the application of AI and blockchain in the tourism sector). Public emergencies (such as the epidemic) also put forward higher requirements for the resilience of the tourism industry. This requires innovative and entrepreneurial talents to have dynamic adaptability, be able to respond quickly to market changes, and solve practical problems in industrial practice [4]. For instance, during the COVID-19 pandemic outbreak in China, many tourism enterprises were confronted with the predicament of stagnant offline business. Practitioners with innovation ability achieved sustainable business development by transforming into “cloud tourism” (such as Live-streaming tourism and online cultural lectures) and developing local and nearby tourism products. This is precisely a concrete manifestation of dynamic adaptability and problem-solving ability.

3.The Problems in the Integration of Industry and Education in the Current Innovation and Entrepreneurship Courses of Tourism

3.1 The Collaborative Mechanism Is Loose-Knit and School-Enterprise Cooperation Is Superficial

At present, school-enterprise cooperation in tourism is mostly confined to the “superficial cooperation”. Enterprise engagement is relatively low in curriculum construction. They mostly provide internship positions and give lectures, and have not truly integrated into the whole process of curriculum design, teaching implementation and assessment. On the one hand, enterprises are reluctant to open up their core business scenarios and digital operation experience to schools due to concerns about the leakage of business secrets and excessively high investment cost. On the other hand, schools lack a mechanism to proactively align with the enterprise demand. The curriculum setting is still mainly based on disciplinary logic and has not fully considered the requirements of enterprises for the ability of digital talents. For instance, in some schools, the innovation and entrepreneurship courses still mainly focus on “writing business plans” and “analyzing entrepreneurial cases”, and lack instructional content about actual business such as the design of digital tourism products and online operations. This results in that students have to undergo enterprise training again after graduation and it is difficult for them to quickly adapt to their jobs [5].

3.2 The Course Content Lags Behind Industry Development and Is Disconnected from Industrial Digitalization Practice

Amidst the digital transformation, the business formats and technology application are updated rapidly in the tourism industry. However, the content update speed is slow in innovation and entrepreneurship courses of tourism, making it difficult to keep up with the development pace of the industry. On the one hand, the content of the textbooks is mostly conventional knowledge of tourism entrepreneurship, and cover less about emerging fields such

as “smart tourism”, “digital marketing”, and “tourism big data”. On the other hand, teachers lack practice experience in industrial digitalization. In the teaching process, they still mainly focus on theory teaching, and find it difficult to integrate practice content, such as the application of digital tools and the design of innovative business models, into the curriculum. For instance, when explaining the design of tourism products, if teachers only explain conventional route planning without covering how to use big data to analyze user demand and how to promote and book products through mini-programs, students will not be able to master the core skills of tourism product innovation in the digital age.

3.3 The Teaching Teams Have Monolithic Structures and There Are Insufficient Reserves of Double-Qualified Teachers

Double-qualified teachers are the key bridge connecting education and industry. However, the insufficient reserves of them have become an important factor restricting the integration of industry and education in the innovation and entrepreneurship courses of tourism. At present, most tourism teachers belong to “academism”, with solid theoretical foundation. However, they lack practice experience in the digital operations of tourism enterprises, making it difficult for them to guide students to solve practical problems in the industry during teaching. Although the technical backbones and management talents in enterprises have rich practice experience, they lack the ability to teach and educate students, making it difficult for them to transform practice experience into systematic instructional content. This teaching team structure featuring “separation of theory and practice” leads to the inability of innovation and entrepreneurship courses to achieve a virtuous cycle that “theory guides practice and practice feeds back to theory”, which affects the quality of talent development.

3.4 The Assessment Systems Are Monolithic and Lack Consideration of Practical and Innovation Ability

Currently, the assessments are mainly “outcome-oriented” on innovation and entrepreneurship courses of tourism, such as assessing students’ learning outcomes through business plans, course papers and other forms. And there is a lack of dynamic assessment on students’ practice processes and innovation ability. This assessment system has two problems. Firstly, it neglects the “process-oriented” feature of tourism innovation amidst digital transformation. Many innovation projects need to go through multiple stages such as market research, product design, and iterative optimization. It is difficult to comprehensively reflect students’ ability merely based on the final outcome assessment. Secondly, it has not introduced enterprise assessment. And the assessment subjects are still mainly school teachers, making it impossible to objectively measure whether students’ ability meet the industry demand. For instance, for a certain travel APP designed by students, if the rationality of its business model is assessed only from a theoretical perspective and it does not pass enterprises tests on its user experience and market conversion rate, it will be impossible to accurately determine the actual value of the project.

4. The Pathways for Realizing Industry-Education Integration in Innovation and Entrepreneurship Courses of Tourism Under the Background of Digital Transformation

4.1 Establishing a “Government-University-Enterprise-Research” Collaborative Mechanism to Enhance the Integration Power

The government, universities, enterprises and research institutions need to define their respective roles and establish a collaborative mechanism of “multi-stakeholder collaboration and shared benefits”. At the government level, policies can be introduced to guide cooperation between universities and enterprises. For instance, the government can establish a digital tourism innovation fund to offer tax incentives and subsidies to enterprises participating in the integration of industry and education. Meanwhile, the government can build a “government-university-enterprise-research” exchange platform to promote resource integration. At the university level, it is necessary to establish a mechanism for proactively aligning with enterprises, such as setting up a “Digital Tourism Innovation Hub”. School teachers and enterprise representatives jointly serve as the heads, and hold regular meetings to discuss curriculum construction and talent development schemes. At the enterprise level, they should

proactively open up their core business scenarios and data resources, such as taking the operation data of Online Travel Agencies (OTA) and the management systems of smart scenic areas as teaching cases, and participate in course assessments to ensure that talent development meets the enterprise demand at the same time. At the level of research institutions, they can provide technical support, such as assisting universities in developing digital teaching tools, collaborating with enterprises to carry out digital innovation projects in tourism, and transforming research findings into instructional content.

4.2 Developing a Modular Curriculum System to Achieve the Alignment of Content with Industry Demand

Guided by the digitalization demand of the tourism industry, colleges and universities can break the disciplinary boundaries of conventional courses, and construct a modular curriculum system of “basic module + professional module + innovative module”. The basic module focuses on basic digital knowledge, such as “Fundamentals of Tourism Big Data Analysis” and “Application of Digital Marketing Tools”, to develop students’ common digital skills. The professional module is integrated with the sub-sectors of the tourism industry, such as “Operations Management of Smart Scenic Areas”, “Online Tourism Product Design”, “Tourism Metaverse Application”, and has enterprise experts participate in the curriculum design to ensure that the content is synchronized with industrial practice. The innovative module mainly adopts project-based learning, such as “Practice of Digital Tourism Startup Projects”, where students form teams to align with the real enterprise demand and complete the whole-process practice from market research to product implementation.

4.3 Building “Double-Qualified and Double-Competency” Teaching Teams to Enhance Teaching Quality

Through the approach of “employing off-campus mentors and assigning school teachers to conduct enterprise practice”, colleges and universities can build a double-qualified teaching team with solid theoretical knowledge and rich practice experience. On the one hand, schools can recruit technical backbones and management talents with digital operation experience from tourism enterprises. For instance, they can employ the operation directors of OTA and the technical directors of smart scenic areas as part-time teachers to teach practice courses. On the other hand, they can encourage school teachers to engage in enterprise practice. For instance, teachers can be arranged to assume a temporary post for personal training and development in tourism enterprises for a period of half a year to one year, participate in the digital innovation projects of the enterprises. And, they can support teachers to obtain digitalization certificates to enhance their practical ability. In addition, they can establish a “school-enterprise mentor pairing” mechanism. School teachers and enterprise mentors jointly guide students’ innovation and startup projects, achieving complementary advantages of “theory and practice”. For instance, the school of tourism in University A signed a cooperation agreement with a certain smart tourism enterprise. The enterprise selected five technical backbones to serve as part-time teachers, while the university sent ten teachers to the enterprise for secondment. Both sides jointly guided the “Digital Tourism Venture Contest” projects of students. Eventually, three projects were successfully implemented and received investment from the enterprise.

4.4 Constructing Virtual-Real Combined Practice and Innovation Platforms to Strengthen Ability Development

Relying on “online + offline” resources, colleges and universities can construct multi-level practice and innovation platforms to provide students with real digital innovation scenarios. The online platforms can develop “Digital Tourism Simulation Training Systems”, such as simulating the operation of OTA and the passenger flow regulation in smart scenic areas. Students can complete practical training such as market research, product design, and data analysis through the systems. Offline platforms can cooperate with enterprises to establish “internship and training bases”, such as setting up “student venture studios” in online travel enterprises and “innovation practice positions” in smart scenic areas. Students can participate in the actual projects of enterprises and transform theoretical knowledge into practical ability. In addition, colleges and universities can construct “Digital Tourism Innovation Incubation Platforms” to provide financial support, technical guidance, market alignment and other services for students’ innovative projects, and help them move from “campus” to “market”. For instance, a certain

university has collaborated with a local cultural and tourism group to establish a “Digital Tourism Innovation Incubation Hub”. The hub not only offers free office space and technical equipment to students but also invites senior executives and investors from the enterprise to provide guidance for student projects. Up to now, several student projects have successfully entered the innovation park of the cultural and tourism group through the incubation hub and achieved commercial operation.

4.5 Establishing a “Process-Oriented + Diversified” Assessment System to Perfect Quality Assurance

Colleges and universities can establish a “process-oriented + diversified” assessment system involving “universities, enterprises and students” to comprehensively measure students’ practical and innovation ability. In terms of assessment content, it is necessary to take into account of both “theoretical ability” and “practical ability”. For instance, they can include the processes of students’ market research, data interpretation, product design, and iterative optimization in projects in assessment, while assessing students’ teamwork skills and problem-solving ability. In terms of the assessment subjects, enterprise assessment is introduced. For instance, enterprises can provide assessment opinions based on students’ performance during internships and training (such as the ability to use digital tools and the feasibility of innovation schemes), and research institutions can assess the technology innovation in students’ projects. In terms of assessment methods, they can employ a combination of “dynamic assessment” and “outcome assessment”. For instance, process assessment can be conducted through phased reports, project presentation, user feedback and other forms, while outcome assessment can be carried out through business plans and project implementation results. For instance, in a certain university, the “Practice of Digital Tourism Startup Projects” course of tourism adopted an assessment system of “10% theory test +30% process report +40% enterprise assessment +20% project outcome”, among which the proportion of enterprise assessment is the highest to ensure that the assessment results can objectively reflect whether students’ ability meets the industry demand.

5. Conclusion

Digital transformation has brought new development opportunities to the tourism industry and also put forward higher requirements for innovation and entrepreneurship education in tourism education. As the core bond connecting education and industry, the deep implementation of industry-education integration cannot only solve the current problem of the disconnection between tourism education and practice, but also develop compound and innovative talents that meet the industry demand. In the future, tourism education needs to further break the boundaries between “schools and enterprises”, and continuously make efforts in collaborative mechanisms, course content, teaching teams, practice platforms, and other aspects to promote the deep alignment of innovation and entrepreneurship courses with the digitalization demand of the tourism industry, and achieve a virtuous cycle that “education empowers the industry and the industry feeds back to education” ultimately to provide talent support for the high-quality development of the tourism industry.

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