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COMMENTARY:

Navigating the Frontier: Addressing Artificial Intelligence Challenges in Tourism and Hospitality Education

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Abstract

In this article, we explore artificial intelligence (AI) integration in tourism and hospitality education, analyze its implications, and propose strategies to address challenges. While AI has revolutionized operational processes and customer experiences, its adoption in higher education presents various opportunities and hurdles. The rapid evolution of AI necessitates frequent curriculum updates and faculty development. Moreover, addressing the digital divide and ethical considerations is also crucial. The article categorizes the implications into technological advancements, educational impacts, and future trends. Strategies for addressing AI challenges include curriculum integration, experiential learning, faculty development, interdisciplinary collaboration, and ethical education. By embracing AI responsibly, educational institutions can prepare students for success in the Fourth Industrial Revolution, ensuring positive social and economic impacts.

Keywords: *Education; Tourism and Hospitality education; Artificial Intelligence; transformation*

Introduction

The integration of Artificial Intelligence (AI) into various industries, including tourism and hospitality, has transformed operational processes, enhanced customer experiences, and facilitated data-driven decision-making. However, adopting AI technologies in education presents opportunities and challenges (Sirkeci & Lo, 2023). The implications are important for all stakeholders and all functional centres in higher education institutions. Administrations, research leaders, tutors, students, and other agents are all within the scope of transformation (Sirkeci & Lo, 2023, p. 65). We are not proposing a comprehensive review, and we are aware that there are many more studies and scholarly outputs that we have not gotten ahold of. However, we aim to pose certain questions discuss the potential implications of AI-related challenges in tourism and hospitality education and suggest strategies to effectively address them.

In recent years, AI has revolutionized the tourism and hospitality industry, offering solutions ranging from personalized recommendations and chatbots to predictive analytics and revenue management systems. These advancements have not only optimized operational efficiency but have also elevated the quality of customer service. Nonetheless, concerns have arisen

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regarding the potential displacement of traditional job roles and the necessity for upskilling and reskilling among industry professionals.

The integration of AI into tourism and hospitality education poses several challenges. Firstly, AI's rapid evolution necessitates frequent curriculum updates and ongoing faculty development to ensure that educational programs remain relevant and effective. Secondly, educators must strike a balance between imparting technical AI skills and fostering critical thinking, creativity, and emotional intelligence among students.

Moreover, the digital divide presents a significant challenge, as not all students and educators have equitable access to AI tools and resources. This inequality in access can exacerbate disparities in learning outcomes and impede the development of a skilled workforce capable of effectively leveraging AI technologies. Furthermore, ethical considerations surrounding AI, such as privacy, bias, and algorithmic transparency, must be thoughtfully integrated into the curriculum to prepare students for ethical decision-making in real-world scenarios.

In the field of tourism and hospitality education, the integration of Artificial Intelligence (AI) technologies has paved the way for a new era of innovation and transformation. This brief literature review examines the multifaceted implications of AI use in this field, categorized into three main themes: technological advancements, educational impacts, and future trends.

Technological Advancements and AI's Impact on Education

Xing (2022) argues that there is a paradigm shift towards Intelligent Tutoring Systems (ITS) in education, propelled by rapid advancements in network technology. Accordingly, AI-based tourism teaching systems leverage multimedia resources and human-computer interaction to create interactive learning platforms, revolutionizing traditional educational models. Additionally, AI's integration facilitates multidirectional development, fostering and pushing for teaching and learning reform and expanding educational horizons.

On the other hand, a study by Ülkü (2023) highlights concerns regarding the integrity of academic assessments amidst the rise of AI-based Large Language Models (LLMs). Perhaps this is one very common worry about academics around the world as we have been rather 'obsessed' with plagiarism detection so far. While AI offers opportunities for personalized learning and predictive analytics, it also raises ethical dilemmas including plagiarism. At the same time, as expected, this is a two-sided story: Bangare et al. (2022) emphasize the role of machine learning in improving student performance, citing applications such as personalized learning and predictive analytics to enhance educational outcomes in tourism and related sectors.

Substantial changes are already underway, as some claim that the Fourth Industrial Revolution (4IR) has catalyzed significant changes in tourism education (See Avgeli et al., 2020). The proliferation of online and tech-enhanced teaching methods, coupled with the integration of AI technologies, have reshaped learning experiences and skill requirements in the tourism industry. Five years ago, Hsu (2018) already predicted a shift towards collaborative and experiential learning environments, driven by advancements in online learning platforms and the incorporation of robotics and artificial intelligence in education. It seems this is going to be the next step in this direction.

Automation and AI adoption in hospitality and tourism, as discussed by Jabeen et al. (2022), reflect industry-wide efforts to gain a competitive edge through smart technologies. Similarly, Samara et al. (2020) highlight the transformative potential of Artificial Intelligence and Big Data (BDAI) strategies in enhancing efficiency, productivity, and personalized experiences for travellers, thus reshaping operational paradigms within the tourism sector.

How to Deal with AI Challenges in Education?

Uncharted waters are full of surprises and no recipe fits all. To effectively navigate the complexities of AI in tourism and hospitality education, we consider several strategies that can be employed to minimise the risks while also benefiting from this transformation.

Curriculum integration is one area to positively embrace AI. AI-related topics should be integrated into existing courses or developed as specialized courses. These may include modules on data analytics, machine learning, natural language processing, and robotics, among others. A rather straightforward strategy.

Experiential learning is another way of avoiding pitfalls while utilising the new tools and abilities. Hands-on experiences, such as case studies, simulations, and project-based learning, allow students to apply AI concepts in practical settings and develop problem-solving skills. Collaborations with industry partners can provide access to real-world data and expertise, enriching the learning experience.

Faculty development is increasingly important as faculty navigate changes and transitions. Ongoing professional development programs should be provided to faculty members to enhance their understanding of AI technologies and pedagogical approaches. Workshops, seminars, and online courses on AI fundamentals, teaching methods, and industry trends can be beneficial.

Universities always strive for interdisciplinary collaboration and numerous programmes incentivise such work. Collaboration across disciplines, such as computer science, engineering, business, and social sciences, fosters innovation and knowledge exchange. Joint research projects and interdisciplinary courses prepare students for multidisciplinary teamwork in AI-driven environments. This is one area to explore further and identify the potential avenues to expand.

Xing (2022) states that "AI is a technical science integrating multiple disciplines. The system can realize the interaction in the front, back, left, right, up, and down directions in tourist attractions through control equipment, such as the keyboard, mouse, or joystick. Artificial intelligence technology has a broad application prospect in tourism teaching. The use of this system has a certain artificial intelligence learning ability so that the auxiliary education system can provide a convenient learning platform for students." This means classrooms will accommodate more and more of technology integrating video, audio, live pictures, electronic documents, and other multimedia resources as "teaching auxiliary materials".

Ethical education as well as ethical business principles are on the rise. Future generations are going to pay more attention to ethical concerns as we can predict based on the expansion of this field in the last couple of decades. Ethics education should be integrated into AI curricula to raise awareness of ethical issues and promote responsible AI practices. Discussions on privacy rights, bias mitigation strategies, algorithmic accountability, and societal impact foster

ethical decision-making among students. This is also part and parcel of tackling with plagiarism and related issues. As Ulku (2023) noted "students' potential use of AI for completing assignments or providing exam responses can hinder real-world education and the development of critical thinking skills and compromise the fundamental objectives of educational assessments." Nevertheless, banning the use of it is never an option. Plans to integrate and use are the way forward.

Conclusion

How tourism education is delivered and experienced has already seen radical shifts due to transformations in communication and transportation over the last five decades. There are increasingly more international students on university campuses and much more multicultural interaction. This has also been exacerbated by the introduction and expansion of virtual systems and novel methods of distance learning. Tourism and hospitality as a multidisciplinary field and a rapidly changing industrial environment are likely to be affected by AI in unpredictable proportions.

As suggested by some pioneer studies (e.g. Hsu, 2018), students' learning experiences may get some support from robot teaching assistants and the technical teams behind can make online learning a prevalent and successful phenomenon. This may release tourism scholars' time to be spent more on research and discovery and less on teaching. We are yet to see how this challenge will unfold.

As AI continues to reshape the landscape of tourism and hospitality, like any other scientific discipline, higher education institutions and governance bodies must evolve to equip students, as well as academics and support services, with the necessary knowledge, skills, and ethical awareness to thrive in AI-driven environments. By addressing the challenges posed by AI through curriculum integration, experiential learning, faculty development, interdisciplinary collaboration, and ethical education, educators can prepare the next generation of industry professionals to harness the potential of AI for positive social and economic impact. It may be tempting for some, and also already happening in some places, but banning AI can be a futile effort as we believe AI is something we need to embrace.

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