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Artificial intelligence in higher education and research A sample of tourism academic opinions

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ABSTRACT

The rise and swift advance of artificial intelligence technologies has led to substantial modifications in educational procedures, encompassing learning, teaching and the research process. Although possessing impactful and enabling characteristics, it is obvious that these technologies are the focal point of significant debates. This research aims to explore the opinions of tourism academics regarding the incorporation of artificial intelligence (AI) within educational and research frameworks, while also recognizing the potential benefits and obstacles associated with them. The data obtained from 15 semi-structured interviews was scrutinized using descriptive and content analysis methodologies. The analyses were carried out with the assistance of MAXQDA software. It was observed that the primary strength of AI tools lies in their rapidity, while their main weakness is the dissemination of inaccurate data. Despite the perspective that AI is incapable of substituting human contributions because it does not possess emotions, its value for reliability has gained considerable attention.

KEYWORDS

artificial intelligence, academic research, tourism education, tourism scholars

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1. Introduction

The gradual evolution of technology and substantial investments have paved the way for the integration of artificial intelligence (AI) into numerous sectors (Talan, 2021), allowing for the utilization of its predictive, diagnostic, recommendatory and decision-making functions (Chen et al., 2022). Academic research (Dergaa et al., 2023) and the education process have experienced notable advances and shifts in the realm of AI (Roll & Wylie, 2016). In the era preceding the extensive adoption of computers and related technologies, educators and learners handled tasks manually, solely relying on human labor (Chen, Chen & Li, 2020) and through traditional manual methods, but with AI, automation of educational and research practices has become feasible (Dergaa et al., 2023). Within the contemporary academic sphere, scholars can apply AI for evaluating research, while online testing platforms can integrate facial recognition capabilities (Bearman et al., 2023).

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In his publication titled "Computing Machinery and Intelligence", Alan Turing introduced a straightforward assessment, which later became known as the Turing test, aimed at evaluating the presence of human-like intelligence in computers (Turing, 1950). Six years after, John McCarthy articulated the concept of AI as a discipline focused on the design and development of intelligent machines (after Kaul et al., 2020). Prior to 1973, the field of artificial intelligence encountered criticism due to its high costs, even as it experienced swift progress and received support from various initiatives, which ultimately resulted in significant reductions in funding for related projects from both the American and British governments. Throughout the 1980s, substantial investments were made by Japan and the United States to promote AI-related efforts; however, these endeavors did not yield noteworthy advances (Haenlein & Kaplan, 2019). Artificial intelligence took on a new dimension in the 1990s with the development of systems that could replicate human brain processes, while the reverberations of Deep Blue's victory over Kasparov in 1997 were profound (Arslan, 2020).

Artificial intelligence has played a pivotal role in revolutionizing and enhancing the educational landscape (Kuleto et al., 2021). Researchers and educators show significant interest and it is widely adopted (Schiff, 2021) leading to numerous debates (Livberber & Ayvaz, 2023). The challenges linked to education encompass the complexities of establishing educational frameworks that incorporate AI, the need to review and verify the content created, and the potential for unfairness in educational systems lacking student technology access (Jafari & Keykha, 2024). According to Saputra et al. (2023), the perils linked to integration in educational practices are centered on ensuring the security of personal data, character traits and adhering to ethical principles. The relationship between teacher and learner may suffer due to the widespread adoption of AI techniques, as noted by Humble and Mozelius (2022). Besides, distinguishing between AI and human authorship poses a significant challenge in academic research, along with the threat of plagiarism. Issues emerge with the incorporation of AI in research regarding the evolution of academic traditions, scholars' resistance to AI, and its impact on national and cultural heritage. Certain countries face constraints in accessing AI because of particular regulations and it poses issues concerning equitable entry because of disparities in internet speed and costs (Jafari & Keykha, 2024).

According to Güner and Çılgınoğlu (2024), incorporating advanced technologies like automation and AI into tourism education is crucial for the future development in Türkiye. Dalgıç et al. (2024) emphasize that advances in digital technology present both new possibilities and challenges within the realm of tourism education, while raising questions about the impact of AI technologies, digital literacy and personalized learning approaches, on educational outcomes. In the context of tourism academic research, Dogru et al. (2024) highlight that AI technologies can significantly alter methods of data collection, analysis and writing. However, they also note the critical need to address various ethical and legal concerns that may arise from their adoption. As noted by Ivanov (2023), researchers could develop significant reliance on AI technologies, which may result in diminished engagement with reading. In this instance, scholarly publications may become increasingly standardized and technical, this would facilitate AI analysis but this transformation could result in a reduction of creativity and innovation. Utilizing AI can elevate the quality of research outputs and expedite the writing timeline for academic papers, yet an overemphasis might hinder innovative thinking.

In the context of academic education and research, the present work has endeavored to ascertain the utilization of AI according to the perspectives of scholars specializing in tourism. The research framework consists of a literature review on the implementation of AI in both educational and research processes, followed by methodology, findings, discussions, and conclusions and recommendations. Grounded in the literature referenced, the research question that underpins this study is outlined as follows:

RQ_1: How do tourism scholars evaluate the influence of AI within the realms of academic research and the educational framework?

2. Theoretical background

2.1. Artificial intelligence in educational processes

The focus of artificial intelligence in educational institutions revolves around creating systems that execute cognitive functions usually linked to human intelligence, especially in areas such as learning and problem-solving (Chen, Xie et al., 2020). The learning experience is greatly enhanced by the intricate and diverse application of AI within education systems. One instance is when the system employs natural language processing and generation, conversational interfaces, avatars and video analysis to assess a student's focus and feelings (Khosravi et al., 2022). Artificial intelligence is applied in education for adaptive learning, evaluating teaching practices, virtual classroom experiences, smart campus developments and robotic lecture deliveries (Huang et al., 2021), while human-computer

interaction supplies potential prospects such as tailored learning experiences. On the other hand, it introduces some challenges, like a teacher's function and the advancement of a sophisticated educational structure (Ouyang & Jiao, 2021). According to Gocen and Aydemir (2020), AI could potentially endanger the future of the teaching profession. Wardat et al. (2024) point out educators' reluctance to embrace new technologies, while their inclination to stick to familiar methods hinders the integration of technology in classroom instruction. According to Zawacki-Richter et al. (2019), the integration of AI in higher education holds considerable promise for improving teaching and learning; nevertheless, it raises ethical concerns and potential risks that must be addressed. These matters revolve around the perils of AI taking over human tasks, the risks to individual privacy and the security of personal data. In contrast, Xie and Wang (2024) emphasize that neglecting the use of AI technology may lead to a reduction in students' cognitive skills and their ability to perform tasks, potentially causing a deterioration in their intellectual capabilities.

2.2. Artificial intelligence in academic research processes

Academics increasingly demonstrate a tendency to incorporate AI into their research practices (Osman et al., 2023) where it is employed in research for activities like peer review, searching academic databases for relevant literature, detecting plagiarism, identifying data fabrication, automatically analyzing text, translating content and many more areas (Thomas et al., 2023). Nevertheless, there are multiple issues to consider within this framework. Kim and Heo (2022) emphasize the lack of human creativity and enthusiasm in AI-based applications. According to Gendron et al. (2022), AI has the potential to cause the erosion and weakening of essential academic activities, along with the potential to transform the landscape of academic publishing. It is argued that researchers should heighten their recognition of the potential repercussions of AI dissemination in academic work. The study by Thomas et al. (2023) highlights the limitations of AI in recognizing predatory publications, fake data, review bias and translation inaccuracies within academic literature. According to Wardat et al. (2024), educators' overall views on AI have been significantly shaped by its portrayal in the media, and by science fiction in the past, resulting in it being perceived as a potential challenge in their profession. On the other hand, it is contended that many organizations provide support for AI in research, projects, consultations, doctoral studies, postdoctoral scholarships and other relevant activities (Dhamija & Bag, 2020).

3. Methodology

This research delves into how academics perceive the incorporation of AI in educational and academic research settings, employing phenomenology as its qualitative research methodology. According to Miles and Huberman (1994), qualitative research serves to address and expand upon the theories and models established during the initial phases of investigation, thereby uncovering fresh viewpoints. The objective of phenomenology is to elucidate the subjective experiences of individuals and communicate these experiences (Mapp, 2008), with a focus on gaining a deeper insight into events as perceived by research participants (Qutoshi, 2018). As noted by Yıldırım and Şimşek (2016), the focus of phenomenology design lies in phenomena that individuals are aware of, yet lacking a comprehensive and nuanced understanding. In phenomenological investigations, Morse (2000) points out that the sample size can vary from 6 to 10 individuals, with Shorey and Ng (2022) expanding this range to from 3 to 25. Fifteen Turkish academicians specializing in tourism were part of the sample for this research with data collection taking place from March 18th to April 3rd, 2024. The sample was segmented by gender, academic expertise and age parameters. The demographic characteristics of the participants are shown in Table 1.

Table 1. Demographic characteristics of participants

Participant code	Gender	Academic experience duration (years)	Age
E18-63	Male	18	63
E18-43	Male	18	43
E18-46	Male	18	46
E6-34	Male	6	34
E20-49	Male	20	49
K13-40	Female	13	40
K5-30	Female	5	30
K16-39	Female	16	39
K25-60	Female	25	60
E7-34	Male	7	34
K6-32	Female	6	32
K3-29	Female	3	29
E11-40	Male	11	40
K6-31	Female	6	31
E15-39	Male	15	39

Source: authors.

Purposive sampling, involves the intentional selection of participants based on their qualifications (Etikan et al., 2016). The rationale behind it stems from the belief that, in light of research goals and objectives, certain individuals may possess distinct and significant perspectives on relevant ideas and issues, necessitating their inclusion in the sample (Campbell et al., 2020). In this analysis, maximum variation was implemented among purposeful sampling strategies, with the assumption that participants possessing diverse characteristics can reveal different dimensions of a phenomenon (Benoot et al., 2016). Participants were chosen for their age, which ranged from 29 to 63 years, and their academic experience spanning a minimum of three to a maximum of 25 years. Tabata and Johnsrud (2008) emphasize that the views of academics on technology are shaped by their age while in a related study, Blank (2024) argues that the responses of academics to technological progress are contingent upon age and tenure.

In the research, data was gathered using interviews, which is a qualitative data collection method. The technique of conducting semi-structured personal interviews aims to enable participants to freely express detailed beliefs and emotions about a given topic (Stokes & Bergin, 2006). The interview form was developed based on research findings from the literature (Ali et al., 2020; Gocen & Aydemir, 2020; Livberber & Ayvaz, 2023). The questions used to collect data were presented to three different experts, and direct quotations were included in the findings to ensure consistency. To boost the reliability of the research findings, the voice recordings underwent transcription and scrutiny, with irrelevant data being excluded from the data analysis. Each interview typically spanned approximately 45 minutes, with both in-person and virtual sessions taking place in office settings based on the academics' schedules.

The research questions were only posed to participants after securing approval from the ethics committee. To ensure confidentiality and anonymity, the identities of the participants remained closed, being categorized using codes that reflected their age, gender and tenure. Purposive sampling involves continuing the research process until researchers can no longer gather new or distinct information from the participants, indicating that data saturation has been achieved (Yağar & Dökme, 2018). Accordingly, the study adopted data saturation as the principal guideline for determining the size of the participant group.

The tool for collecting semi-structured data comprised 13 questions and was organized into three parts. The primary section comprises five fundamental questions pertaining to the extent of the participants' understanding of AI, its pros and cons, and their stances on endorsing or restricting it and whether they find it reliable. The second section involved posing five questions regarding the integration of AI in teaching tourism, while the third focuses on three questions concerning the application of AI in tourism research. Each interview was converted into its own Microsoft Word file, with measures taken to anonymize the information and protect the identities of those involved by conducting qualitative analysis with the MAXQDA 2020 software.

4. Findings

4.1. Level of knowledge about artificial intelligence

Participants were initially prompted to share their level of knowledge on AI during the interview, which was reported to be familiar to three participants, whereas partial knowledge was acknowledged by the other twelve. Their information was obtained mostly through social media, the news, their students and academic and social environments. Some of the statements of the participants in this regard are as follows:

> My knowledge level is equivalent to what I have come across online, particularly on social networking platforms. (E18-43)

> The information regarding these applications reaches me through the academics and students in my vicinity. (E18-46)

> There was breaking news that some of the articles were written by AI. (E15-39)

Participants in the study selected terms to describe AI, as shown in Table 2, noting that many respondents offered more than one response.

Table 2. Artificial intelligence interpretations by academics

Answers	Frequency	Answers	Frequency
Convenience	6	Saving time	1
Practical/swift	5	Pinpoint	1
Creative	3	'Sluggardize'	1
Intelligence	3	It's good to have	1
Our next level	2	Translation master	1
Smart machines/ machines with human intelligence	2	A constructed intelligence	1
Self-learning	2	Much greater advancement of automation systems	1

Summary	2	Revealing	1
Logical	1	Which thinks for me	1
Quick decision-making ability	1	Creator on my behalf	1
Multidirectional	1	Technology	1
Solution-oriented	1	Imitation of human intelligence	1
Images can be adapted	1	A counting process against the machine	1

Source: authors.

The primary emphasis of the participants' statements regarding AI lies in its convenience (n = 6) and participants were requested to specify the AI applications they were familiar with. In this scenario, participants believe that AI supports their professional tasks. Additionally, a crucial element that becomes apparent is its swiftness and effectiveness. Figure 1 displays their responses to the question in the form of a word cloud.

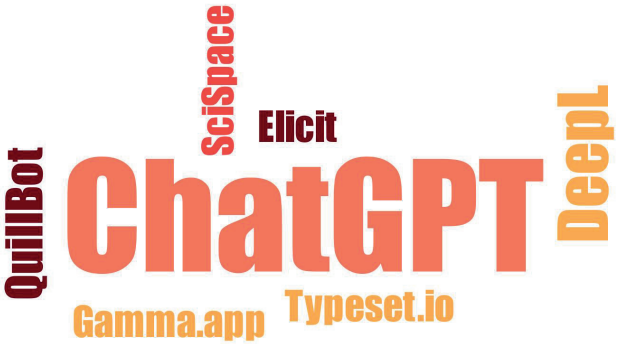

Figure 1. Word cloud of known artificial intelligence applications
Source: authors

ChatGPT is well-known among almost all participants (f = 14), while additionally AI tools like DeepL (f = 4), QuillBot (f = 2), SciSpace (f = 1), Gamma.app (f = 1), Elicit (f = 1), and Typeset.io (f = 1) are mentioned. One of the participants indicated a lack of familiarity with any particular program.

4.2. Advantages and disadvantages of artificial intelligence applications

The participants were questioned regarding the pros and cons of utilizing AI in tourism education and research. While the benefits are often highlighted, various perspectives are surfaced regarding the drawbacks. Table 3 displays the responses provided by the participants regarding the benefits of AI.

Table 3. Advantages of artificial intelligence according to tourism academics

Advantages	Answers	Frequency
General advantages	Speed	6
	Have an idea	3
	Ease of accessing information	2
	Reducing margin of error	2
	Producing practical solutions	2
	Increasing productivity	2
	New business areas	1
	Something beneficial	1
	Personal contribution	1
	Ability to analyze quickly	1
	Ease of providing themes	1
	Saving time	1
	Get support on an issue	1
	Performing fast filtering	1
For tourism education	Obtaining data more quickly	2
	Obtaining further data	2
	Providing quick access to training materials	1
	Providing personalized training	1
	Globalizing tourism education	1
	Developing different suggestions	1
	Simulating practical knowledge	1
	Obtaining exceptional results in language education	1
For tourism research	Summarize	2
	Time efficient	2
	Quick analysis	1
	Making better improvements	1
	Enhancing the speed of tasks	1
	Presenting the main idea of the studies	1
	Offers interesting products	1
	Increasing interest	1
	Creating fast content	1
	Guiding assistant	1

Source: authors.

Concerning advantages, the majority of respondents highlighted speed, time efficiency, convenient information retrieval and idea generation. Participant K5-30 expresses some optimistic perspectives on AI:

> … undeniably, I think the most important thing is speed.

and as E18-63 puts it:

> … something that thinks for me, thinks like me, contributes to me. Why should I think negatively? It is advantageous.

Upon analyzing the benefits of tourism education, the majority lean towards the notion of having swift access to a greater amount of information. Respondent K13-40 articulated her support for this particular issue:

> … I think it is definitely practical.

The key aspects considered are the advantages it offers for tourism investigation, the delivery of details and timesaving. The prevailing belief is that AI is more efficient than humans when it comes to conducting research in the field of tourism. Participant E20-49 expressed his positive opinion on this issue:

> … we can speed up our work and provide better developments.

Table 4 presents viewpoints regarding the drawbacks of employing AI.

Table 4. Disadvantages of artificial intelligence according to tourism academics

Disadvantages	Answers	Frequency
General disadvantages	Collecting misleading information	2
	Applications that make people dull and lazy	2
	Individual privacy	2
	Leading to job loss for some professions	2
	Dangerous	2
	Not safe	2
	Not uploading private info	1
	Offering limited information	1
	Not complying with human rights and values	1
	Not uploading private info	1
	Offering limited information	1
	Not complying with human rights and values	1
	Definitely needs to be checked	1
	Cyber attacks	1
	Not ethical	1
	Decreasing human workforce	1
	Collecting misleading information	2
	Applications that make people dull and lazy	2
	Individual privacy	2
	Leading to job loss for some professions	2
	Dangerous	2
	Not safe	2
	Not uploading private info	1
	Offering limited information	1
	Not complying with human rights and values	1
	Definitely needs to be checked	1
	Cyber attacks	1
	Not ethical	1
	Decreasing human workforce	1
For tourism education	Assignments and theses made by AI	3
	Incorrect learning	2
	Blunting the reasoning	1
	Narrowing down vocabulary	1
	Reducing reading habit	1
	Decreasing taking notes habit	1
	Killing creativity	1
	Causing to lose social orientation	1
	Reducing interaction between educator and student	1
	Lessened necessity for instructors	1
	Being left behind by technological progress	1
	Dulling synthesis	1

For tourism research	Blunting perspectives	2
	Creating ethical violation	1
	Need for approval	1
	Articles written by AI	1
	Creating prejudice	1
	Inaccurate sources	1

Source: authors.

Upon analyzing opinions on the drawbacks of AI, a prevailing sentiment emerges that it has the potential to induce lethargy, to compromise personal privacy, and to disseminate inaccurate data. Furthermore, some participants perceive it as hazardous and untrustworthy – K6-32 expressed her negative opinion about this issue:

> There may be cyber-attacks, so it does not seem reliable to me.

Respondent K16-39 stated:

> I think the system still has vulnerabilities, so it should have supervision.

According to most viewpoints on drawbacks in tourism education, utilizing AI to complete students' theses and assignments could result in inaccurate information. An unfavorable stance on this particular issue was emphasized by participant E18-43:

> … I am questioning the validity of this information.

Critics contend that tourism research may diminish holistic perspectives, lead to ethical violations, and require auditing and validation to address its unreliability. Respondent E11-40 shared his perspective on the dual impact of AI on tourism research by stating:

> … it can perform and interpret analysis much faster…

and

> … may appear as a violation of ethics.

4.3. Should it be limited or supported?

The majority of respondents advocated endorsing the utilization of AI when asked about whether its use should be restricted or encouraged. Table 5 displays the answers provided by the participants to this particular question, noting that participants offered more than one response.

Table 5. Should the use of artificial intelligence be limited or supported?

Answers	Frequency
Should be supported	6
It is necessary to adapt	3
Research should be limited	3
Should be limited	3
Should be supported in terms of education	2
Can be used to a certain extent	2
It should be supported, but training should be given	2
Should not be limited, but should be controlled	2
It should be used knowing what you want to do	1
Cannot be limited	1
It should be used in balance	1

Source: authors.

The feedback from the participants presented in Table 5 indicates that there is a consensus among six individuals advocating for the support of AI. Three individuals expressed the view that incorporating AI is essential, whereas others contend that its use should be limited in research methodologies (n = 3) or in all scenarios (n = 3).

K13-40, among the participants, voiced a clear endorsement for the initiative and stressed the need for its backing:

> If we assume that the world will be governed by it, limiting it would be a very reactionary approach. Of course, it should be supported because we have to keep up with the world and technology.

Respondent E20-49 expressed his opinion:

> I am against its limitation. Because limiting it prevents its development.

Certain participants support the notion but suggest placing limitations as well. Here are a few statements from participants who articulated this stance:

> It is essential to provide backing for AI, but educators and academics must also receive instruction on their utilization in educational settings. (E18-43)

> I believe it has reached a stage where constraints are no longer effective. Adjustments are necessary. (K16-39)

> There is a low probability of imposing restrictions on it, so it deserves backing with proper oversight. (E7-34)

> Limitation is crucial, but implementation is equally vital. (K5-30)

Some participants, on the other hand, had entirely unfavorable views and believed restrictions were necessary – K6-32, for instance, made a statement:

> There is a clear necessity for restrictions to be imposed. In my opinion, the situation is escalating in terms of risk.

Respondent E15-39 supported this assertion:

> Should AI persist in this manner, it will autonomously generate articles and publish materials… . I believe there should be restrictions in place.

4.4. Using artificial intelligence in tourism education and research

The participants were questioned on two different occasions regarding their engagement with AI applications in the fields of tourism education and tourism research. The responses provided by the respondents are outlined in Table 6, considering that multiple answers were given.

Table 6. Use of artificial intelligence (AI) in tourism education and research

Using AI		Frequency
In tourism research	I didn't use	4
	I would consider using	3
	I use	15
	Translation	7
	Identifying journals based on content	2
	Relationship between variables	2
	Paraphrasing	1
	Content creation	1
	Proofreading	1
In tourism education	I didn't use	10
	I would consider using	3
	It definitely needs to be used	3
	I use	12
	Getting information	5
	Translation	2
	Create presentations	2
	Compilation note preparation	1
	Homework control	1
	Content creation	1

Source: authors.

When questioned about their use of AI in tourism research and their opinions on it, it was revealed that four participants had not yet utilized it, with three expressing interest in its potential application. It was noted that the majority of users employ it for the sole purpose of translation. Moreover, it was established that the tool was applied to various tasks like categorizing articles based on their content, establishing connections between different factors, reaching unavailable sources, generating content, proofreading and paraphrasing. Applications used for this purpose are Google Translate, Research Rabbit (SciSpace), QuillBot, Typeset.io, Elicit, and ChatGPT. Respondent K5-30 commented on this issue:

> I employed it once to assess a journal's content. I submitted a research synopsis and reviewed it. It's truly advantageous, much like that particular benefit.

As a different opinion, K25-60 stated:

> I lack experience in employing AI for academic research. Nevertheless, the swift advancement of this technology ensures its integration into our daily routines. Adhering to ethical guidelines when utilizing it poses no issues. I, too, have the capacity to utilize it.

Participants encompassed individuals who have utilized AI within tourism education, those who have no prior exposure, those contemplating its adoption, and those who have experimented with it unsuccessfully. The application of AI in the field of education remains comparatively limited, with some individuals expressing interest in incorporating it into tourism education. On the other hand, there are participants who advocate for its integration into tourism education. For example, K16-39 mentioned about her trial attempt:

> I tried a couple of slide programs. But my anticipations were not fulfilled by the result… .

Respondent E18-63, who expressed disapproval of the extensive application of AI in tourism education, elucidated his viewpoint with the subsequent statement:

> It may be limited, but there is no such thing as using it heavily.

Participant K25-60 stated that she occasionally benefits from AI in tourism education and said:

> … it definitely needs to be used. Because there are many AI tools used in the industry… . I think it is useful for students to know this.

There are also participants who use it to obtain information, translate, prepare slides or create content. Among these participants, E11-40, said:

> Creating PowerPoint presentations… I use it occasionally for educational activities in terms of access to information…

and stated that he used Gamma.app for this purpose, is one of them.

Diverse opinions were gathered from participants when questioned about the feasibility of incorporating AI into tourism education. The results are summarized in Table 7, noting that respondents provided multiple responses.

Table 7. Potential for artificial intelligence to be included in tourism education programs

Questions	Answers	Frequency
Integration into tourism education?	It can definitely be integrated	3
	I don't think it can be used much in education	2
	Can be used as a support	1
	Will be integrated in the future	1
In what ways can AI be integrated into the curricula of tourism education or what objectives can it serve?	Can be used in applied fields	6
	Can be used in recipes' preparation	3
	Can be used to create menus	3
	Can increase creativity	2
	Can make food and drink pairings	1
	Plate design can be made	1
	Can be used in theoretical subjects	3
	Virtual reality can be used	1
	Sculptures can be created for art history class	1
	Can compare laws	1

Source: authors.

The findings presented in Table 7 indicate that three participants affirmed the potential for integrating AI into tourism education. Additionally, the table highlights an important aspect concerning the application of this integration in practical domains. According to the responses of six participants, it is possible to formulate food recipes.

The consensus is that AI holds promise for integration into tourism education. E11-40, one of the participants with positive views, stated:

> It can definitely be integrated. It especially enriches the content of education…

and E18-46 stated that:

> … it can make significant contributions especially in finding various recipes for meals to be prepared in kitchen applications, developing new food production ideas and new presentation techniques.

Artificial intelligence is believed to have potential applications in recipe development, menu planning, and plate presentation, particularly within the realm of applied tourism education. Nevertheless, there are those who argue against its utilization in applied education. For example, respondent K6-32 stated:

> It can be used in theoretical areas… should not be integrated into applied areas.

and K13-40 expressed:

> Of course, putting that pot on the stove is a completely different thing. It can be used as a supporter.

Participant E20-49 presented a unique perspective that diverged from the previously mentioned views. He articulated his thoughts using the subsequent statement:

> … it is also my dream; I am no longer in favor of teaching in classical classes. There will be 6 square meter classrooms like the room we are in now, the teacher will come in, we will use VR glasses, AI will prepare presentations for you, structures will be prepared, and the teacher will do his duty. I think we are heading towards that.

4.5. Ethical evaluation of artificial intelligence

The ethical evaluation of AI in tourism education and research prompted diverse perspectives among participants. Table 8 displays the responses of the participants regarding this matter.

Table 8. Ethical aspects of incorporating artificial intelligence into tourism education and research

Fields of use	Answers		Frequency
In tourism education	It is ethical	It is absolutely ethical	2
		If reference is shown	2
		If used for slide preparation	1
		If used to prepare notes	1

Table 8 (cont.)

In tourism education	It is ethical	If kept under control	1
		Relevant to the person's purpose	1
		If used to access information	1
	It is unethical	It is absolutely unethical	3
		Using completely AI	4
		If information is shared without checking	2
		Plagiarism	2
		There is no source of information	1
		Not transparent information	1
		Individuals have no knowledge or consent	1
		If copy paste	1
In tourism research	It is ethical	In innocent uses, without any preparation	3
		It's about whether we comply with ethical rules or not	3
		We must be able to control plagiarism	2
		Must be under the control of the researcher	2
		If reference is shown	2
		Depends on what it is used for	2
		Without providing full AI information	1
		Saves time	1
		Using correct Turkish expressions	1
		Warns about overlooked references	1
		Sorting the resources used	1
	It is unethical	It is absolutely unethical	4

Source: authors.

Two participants found the use of AI in tourism education ethical, while three believe it is completely unethical. Nonetheless, a group of participants contends that it could be viewed as ethical given particular criteria. The participant who expressed his ethical opinion said:

> Why not ethical? AI also compiles information from the internet. (E18-43)

Participants who said they would definitely find it unethical explained this by saying:

> I don't find it ethical… . Then I'll leave the classroom, open it, let the student watch, and I'll sit here. (E18-63)

> … definitely not. Is there a source of that information? No, I mean I don't know. (K5-30)

> Unethical practices such as copy-paste and plagiarism are emerging much faster and uncontrollably. (K6-31)

Nevertheless, those participants who uphold the view that it is ethical do not perceive the use of AI in tourism education as ethical when evaluating it without information verification. Respondent K6-32 expressed her opinion on this:

> … balanced benefit is important… offering education entirely dependent on AI is unethical.

K25-60 expressed her opinion:

> It's about how or for what purpose this person uses what s/he uses.

Four participants strongly opposed the ethical implications of employing AI in tourism research, whereas others believed it could be deemed ethical given specific circumstances. Their assertion suggests that the ethical application of AI in tourism research can be justified if it does not exclusively rely on AI knowledge, is not preparatory, or if proper referencing is included. For example:

> … it may be ethical in innocent uses… . I do not find it ethical in the sense of resorting to improvisation. (E18-43)

> … if it is used for your convenience and in a balanced manner, it would not be very unethical… . (K6-32)

> I do not see a problem if a reference is made. (E7-34)

and

> It would be more ethical if it is cited, referenced or stated that support was received from this. (K13-40)

4.6. Using artificial intelligence instead of human roles

The participants were probed about their views on the use of AI in place of academics for tourism education in the future, its potential to engage in tourism research, and whether they regarded this as a threat. Table 9 outlines different perspectives on the issue, with consideration given to participants offering multiple answers.

Table 9. The possibility of artificial intelligence taking over human roles

Fields of use	Answers	Frequency
In tourism education	I don't think it will replace academics	10
	No concept of emotion	4
	Cannot interact with students face-to-face	3
	I see it as a threat in the future	3
	On the contrary, it will be supportive	2
	It can replace lectures	2
	There has to be communication	2
	Cannot completely replace	1
In tourism research	I believe that it will not be extensively utilized in the field of tourism studies	10
	Can't replace emotions	4
	Only statistics and quantification are possible	2
	Cannot do independent research	1
	Cannot synthesize and interpret information	1
	It kills creativity	1

Source: authors.

In terms of tourism education and research, the consensus among academics is that AI does not pose a threat to their work. Proponents of the belief that AI cannot supplant humans in tourism education argue that the absence of emotion, direct interaction and the need for communication, are the primary factors supporting their perspective. For example:

> In what way can AI grasp the emotions, concerns, and comprehension level of a student in real-time? (K5-30)

> … if human beings exist and will exist in the future, that is, if they are not going to be robots, they need communication (P13-40)

and

> … can the other party internalize the information it gives, that's what really matters. This is the thing about academics anyway… (E15-39)

explain why it is thought that they cannot replace humans. Similarly, as an example of statements advocating the same view for tourism research, respondent K3-29 said:

> … at the end of the day, all studies would be similar to each other and originality would disappear. That's why AI can't replace everything… .

and K5-30 expressed:

> AI is already doing research, but we give it the problem, AI does not know the problem.

Nevertheless, three respondents anticipate perceiving it as a potential threat in upcoming times, albeit not presently. Among them, E20-49 articulated his perspective as follows:

> I see it as a threat… . Since AI will directly affect the privacy of the person, we are currently teaching it in general in the classroom according to our education system. AI will explain it personally. This is actually a magnificent thing… .

4.7. Reliability of artificial intelligence

Participants were asked to express their perceptions of the dependability of AI, focusing on its accuracy in providing information and its performance in translation and other tasks. The query centered on the risk associated with uploaded data potentially being exploited by others when using various applications. Despite findings indicating unreliability in both aspects, certain individuals remain convinced of the accuracy of AI-generated information. Responses in this direction are shown in Table 10.

Table 10. Reliability of artificial intelligence

Answers	Frequency
No, I don't find it reliable	7
I need to confirm	4
I'm not a hundred percent sure	4
It needs to be under human control	3
I can use it with confidence in its accuracy	1

Source: authors.

Participant E6-34 stated that he found it reliable:

> In my opinion, AI consists of zeros and ones in computer language. Therefore, trusting mathematics and trusting AI are in the same equation. I can use it with confidence in its accuracy.

Some of the statements of participants who think it is unreliable are as follows:

> I am absolutely afraid that others may access my article or research before it is published. (E18-43)

> I do not find only AI, but also internet applications in general, safe. (K6-31)

> … I again confirm that AI did. (K5-30)

> … I do not find AI very reliable, considering that it obtains data over the internet and not all sources on the internet reflect everything accurately. (E18-46)

Respondent K13-40, on the other hand, explained that she did not find it safe as follows:

> Just as I am not sure that I will not see my picture in another form on another site one day, I am not sure that I will not see my article or my work in something completely different.

5. Discussion

Education and research processes have been transformed by the expansion of AI leading to distinct shifts in learning environments (Osman et al., 2023). It is a frequent occurrence to see debates centered on whether AI is meant to replace or support humans. In the realm of education, like in numerous other sectors, the precise impact remains uncertain and challenging to foresee (Cukurova et al., 2020). According to Marengo et al. (2024), its incorporation in higher education represents a relatively recent development, and significant exploration remains necessary to determine the most effective methods for integrating it into educational practices. Thus, it is vital to pay attention to evolutions and patterns in the field of education (Devedžić, 2004).

Academics are found to possess limited understanding of AI, primarily drawing information from students, social media and the news. ChatGPT stands out as the AI application most recognized within academic circles and given its frequent mention in news and social media, it is suggested as the initial AI program to be tested. The research by Samala et al. (2025) indicates that a significant number of educational institutions have integrated ChatGPT into their systems, which is noteworthy. According Haleem et al. (2022), ChatGPT has seen a consistent rise in popularity within academic circles since its debut in 2022, largely because of its capacity to address problems of varying magnitudes. The research by Zeb et al. (2025) underscores the potential of ChatGPT in crafting chatbots and virtual assistants that can offer insights on various subjects and tackle commonly asked questions, proving especially advantageous for those in academia. Ray (2023) emphasizes that the ChatGPT application stands out as a potent tool within the realm of AI, boasting a broad range of uses. In this setting, the ease with which ChatGPT can be customized for academic and research purposes reinforces these findings.

DeepL, another commonly utilized AI tool, was predominantly employed for translation tasks. The research by Amaro and Pires (2024) indicates that widely adopted translation applications, including DeepL, have reshaped the global interactions of translation and communication in academic settings. However, Das (2018) argues that AI-powered translation tools fail to capture the cultural and social subtleties of language, leading to potential issues with meaning and structure, ultimately concluding that human translation cannot be replaced. Given the potentially advanced foreign language skills of academics, utilizing them for translation tasks could serve as a time-saving and workload-reducing strategy. The practicality and speed of AI applications make them prominent, aiding in the improvement of educational and research activities. Nevertheless, doubts exist concerning its dependability. Particularly noteworthy drawbacks of the system include information security concerns regardless of accuracy, and the diminishing demand for human resources. At this point, Khanzode and Sarode (2020) address comparable topics while categorizing the pros and cons of AI. According to Huang (2024), AI exacerbates inequalities and poses a threat to the confidentiality of data. Al-Tkhayneh et al. (2023) point out that AI offers potential advantages like enhancing individual learning experiences, aiding in administrative duties, and conducting extensive data analysis, yet there are apprehensions regarding interpersonal relationships and educational depth. Findings also indicate concerns regarding the potential of AI tools to induce laziness, diminish interpersonal connections, and limit individuals' viewpoints. Montenegro-Rueda et al. (2023) suggest that AI tools have the potential to enhance educational procedures, emphasizing the necessity for educators to possess a solid understanding of how these technologies operate for successful integration. On the other hand, a key point to note is the vital nature of practical training within the realm of tourism education, as it enhances and converts theoretical information obtained from face-to-face classes and textbooks (Zhu et al., 2023).

The opinions of the research participants lean towards supporting AI. Nevertheless, academics advocating its endorsement emphasize the importance of establishing clear boundaries, providing training and ensuring adaptation. In order to prevent the squandering of crucial human and information resources, organizations are advised by Metaxiotis et al. (2003) to be receptive to technology-driven transformations. Drawing clear lines is crucial, especially in relation to AI, and a more thorough understanding is essential. According to Baidoo-Anu and Owusu Ansah (2023), educators find themselves in a state of uncertainty as advances in AI have the capacity to bring about significant changes in the education sector. The uncertainty surrounding its future effectiveness in educational and research settings, along with the fear of lagging behind, can result in conflicting viewpoints.

The findings indicate that AI is utilized by participants for PowerPoint presentations and translation purposes. Academics may find the preparation of presentations to be a time-intensive endeavor, a process that can be enhanced through the utilization of AI, as indicated by Zheng et al. (2022). Li et al. (2023) emphasize the essential role and extensive use of technology in the field of translation and, as proposed by Wang et al. (2023), it can play a role in translating or revising imperfect English within academic work. Moreover, there is a viewpoint suggesting that it can function as a form of support in academic contexts and deliver customized educational content to students. Artificial intelligence, as proposed by Çam et al. (2021), can play a role in supporting teachers and providing personalized evaluations for students. Nonetheless, it appears that academics have not embraced these tools extensively as they have not completely grasped their applications. The aim is to utilize it for activities that require a substantial time investment and then consistently validate its results, indicating a level of distrust.

It can be inferred from the research findings that students make more frequent use of AI applications than academics, but academics are able to determine the presence of AI in assignments they review. It was noted by them that students are conscious of using AI for homework support and stressed the importance of validation. It is important to acknowledge that academics may have concerns about utilizing data from AI in educational and academic settings without verification. Concurrently, one of the outcomes of this research is the perception of this circumstance as unethical. Dergaa et al. (2023) suggest that employing such instruments raises doubts regarding the authenticity and dependability of research, emphasizing the necessity for thorough assessments encompassing possible applications, constraints, ethical standards and openness.

Participants offer a range of responses to inquiries regarding the ethical implications of employing AI in educational and research settings. According to Du and Xie (2021), the ethical dilemmas surrounding AI stem from a range of issues including biases, ethical decision-making, cybersecurity and job displacement caused by automation. The utilization of AI tools in academic practices and the attribution of authorship in published academic papers have sparked a contentious debate among publishers, editors and academics, as outlined by Guleria et al. (2023). Despite the presence of numerous works in academic literature being written using AI, citing chatbots is unsuitable due to their inability to ensure the reliability and precision of academic content. According to Akgun and Greenhow (2022), even though AI applications bring about benefits, there are social and ethical downsides, including different types of injustice and inequality. Ivanov (2023) emphasizes that the excessive reliance on and improper application of AI can negatively affect the commitment of students and higher education institution staff to ethical standards. In this context, in order to shape a forthcoming cohort that is diverse and capable of aiding in the advance of AI, it is imperative for students and teachers to acquire knowledge via ethics-centered educational programs and training.

At present, the substitution of the human factor with AI appears unattainable. The prevailing belief is that humans are inherently social creatures who require interaction and it is anticipated that AI cannot replicate human behavior due to the complexity of human emotions. However, the debate surrounding the potential impact of technological advances on the future utilization of AI remains contentious. According to Tao et al. (2019), technological tools devoid of emotions, fall short in delivering the personalized approach that human teachers offer to cater to the diverse limitations and potential of each student. In the view of Luan et al. (2020), the proper use of new technologies will assist in the exchange and absorption of knowledge, without displacing the role of humans. According to Celik et al. (2022), the shift towards digital education does not imply a reduced need for teachers in the future, instead of speculating about replacement, understanding the advantages of AI can lead to a transformation in their responsibilities within educational settings. There is a consensus that regardless of the advances, algorithms are still unable to replicate the complexity inherent in the human mind (Popenici & Kerr, 2017). According to Yuskovych-Zhukovska et al. (2022), AI systems concentrate on well-defined duties, possess a highly limited scope, are tailored for particular functions, and are currently distant from replicating human multi-tasking abilities. Participants in this research assert that creations generated by artificial intelligence exhibit a standardized format, resulting in a decline in their uniqueness.

The perception of trustworthiness in individuals, as outlined by Lewis and Marsh (2022), is influenced by their temperament or the level of trustworthiness found in alternatives. Ryan (2020) argues that AI does not possess the essential attributes to inspire trust, defined by common standards, as it fails to fulfill its emotional and normative components. Viewing AI as trustworthy diminishes the importance of interpersonal trust, and assigning human characteristics to it relieves those involved in its creation and utilization of responsibility. The prevailing view among participants in this study is that AI is deemed untrustworthy. According to Marengo et al. (2024), a significant issue revolves around the implications for privacy and security, as the integration of AI in educational settings may result in the gathering and retention of sensitive information. Indeed, the participants voiced their worries about the trustworthiness of the information, the risk of malicious activities involving private data, and the importance of having access to accurate information.

6. Conclusions and recommendations

The broad application of AI is linked to financial, technological and human resource elements. In order to optimize its use, it is essential for individuals to be well informed about this technology. At the same time, people often question situations they do not fully comprehend, reflecting their natural skepticism and in this respect, educators can effectively integrate developing technologies into academic settings by receiving training in AI and expanding their knowledge base. Technology is progressing swiftly, and failing to keep up with these advances could lead to drawbacks in the realm of education and research. Artificial intelligence has the potential to reduce the importance of the human factor in the core activities of education and research, leading to the weakening and decay of essential academic functions. However, the incorporation of emerging technologies into a community hinges on comfort with technology, its usefulness and the level reached. In this particular situation, educators who are well versed in it and have significant experience in educational research may have a different perception, perspective and interpretation.

Tourism is intertwined with human encounters, specifically the educational journey is not solely rooted in theoretical understanding. As an illustration, AI has the capacity to generate innovative recipes and recommend perfect product combinations. Nevertheless, there are deficiencies in the pleasure derived from the smell, taste and visual attractiveness of the cooking. Simultaneously, the inadequate infrastructure and limited availability of advanced technologies, especially in the integration of technology in educational procedures, pose a major hindrance to deriving clear conclusions about experiential processes.

Human beings are social, emotional, make mistakes and have authenticity. For example, there are serious differences even between academics who conduct research in the same field or teach the same course, a process shaped according to a person's unique characteristics. The language an academic uses when writing an article and the interaction with students while teaching a course is personal. But AI may lead to uniform research or education processes in the future, at which point originality may disappear. As a matter of fact, many reputable journals demand guarantees that research is not conducted using AI, and AI detection systems are even used.

Another of the biggest threats posed is the inability of educators to manage processes properly due to insufficient knowledge. For example, not having the competence to understand how a research report written by a student is prepared and whether AI has been used or not, conflicts with the teaching role. It is thought that educators should be trained first, based on the fact that the innovations, change and transformations brought by technology cannot be ignored or overlooked.

In spite of the fact that AI offers a wide array of advantageous features for the academic community, it also brings with it a set of unprecedented challenges that are unlike anything that has been experienced before in the educational and research landscape (Huang et al., 2021). The main theoretical outcome of this research is to expand the scope of research on AI in tourism education and the research process, facilitating a shift from conceptual analysis to practical exploration. Unlike earlier studies that focused on student experience (Marrone et al., 2022), this research emphasizes the opinions of academics about the educational and research process linked to AI.

A significant practical insight highlights the necessity for academics to receive education in AI technologies. Indeed, the use of AI in tourism education can profoundly affect (Neophytou et al., 2025) the structure of institutions. According to Renkema and Tursunbayeva (2024), AI has the potential to revolutionize the field of academia. In this scenario, it is essential to set up units that facilitate its integration in academic settings, to design training courses, and to develop regulations that clarify the permissible limits of utilization.

One of the main limitations of this research is that it only includes tourism academics. Future research endeavors may focus on different cohorts, such as students, employees in tourism industry, or large groups that utilize technology extensively. Future research may focus on academics in applied sectors such as gastronomy or tour guiding where human

interaction is more intense, or how AI can be used to support practical training processes. A significant limitation of this research is the non-segregation of academics into the departments corresponding to their areas of expertise. Another is that the research was conducted with a qualitative method, which affects the generalizability of the results. Future research can be structured to include experimental processes or quantitative methods associated with the use of AI.

References

Akgun, S., & Greenhow, C. (2022). Artificial intelligence in education: Addressing ethical challenges in K-12 settings. *AI and Ethics, 2*(3), 431–440. https://doi.org/10.1007/s43681-021-00096-7

Ali, M.Y., Naeem, S.B., & Bhatti, R. (2020). Artificial intelligence tools and perspectives of university librarians: An overview. *Business Information Review, 37*(3), 116–124. https://doi.org/10.1177/0266382120952016

Al-Tkhayneh, K.M., Alghazo, E.M., & Tahat, D. (2023). The advantages and disadvantages of using artificial intelligence in education. *Journal of Educational and Social Research*, *13*(4), 105–117. https://doi.org/10.36941/jesr-2023-0094

Amaro, V., & Pires, M.J. (2024). Found in translation, lost in education: Artificial intelligence's impacts on translation tertiary education in Macao. *Asian Education and Development Studies*, *13*(4), 269–281. https://doi.org/10.1108/AEDS-01-2024-0012

Arslan, K. (2020). Eğitimde yapay zekâ ve uygulamaları / Artificial intelligence and applications in education. *Batı Anadolu Eğitim Bilimleri Dergisi / Western Anatolia Journal of Educational Sciences*, *11*(1), 71–88 [in Turkish]. https://dergipark.org.tr/tr/pub/baebd/issue/55426/690058

Baidoo-Anu, D., & Owusu Ansah, L. (2023). Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning. *Journal of AI*, *7*(1), 52–62. https://doi.org/10.61969/jai.1337500

Bearman, M., Ryan, J., & Ajjawi, R. (2023). Discourses of artificial intelligence in higher education: A critical literature review. *Higher Education: The International Journal of Higher Education Research*, *86*(4), 369–385. https://doi.org/10.1007/s10734-022-00937-2

Benoot, C., Hannes, K., & Bilsen, J. (2016). The use of purposeful sampling in a qualitative evidence synthesis: A worked example on sexual adjustment to a cancer trajectory. *BMC Medical Research Methodology*, *16*, Article 21. https://doi.org/10.1186/s12874-016-0114-6

Blank, T.H. (2024). Developing incremental innovation in the high-tech industry: The effect of age and tenure in research and development teams. *Cross Cultural & Strategic Management*, *31*(2), 289–308. https://doi.org/10.1108/CCSM-04-2023-0054

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: Complex or simple? Research case examples. *Journal of Research in Nursing*, *25*(8), 652–661. https://doi.org/10.1177/1744987120927206

Celik, I., Dindar, M., Muukkonen, H., & Järvelä, S. (2022). The promises and challenges of artificial intelligence for teachers: A systematic review of research. *TechTrends*, *66*(4), 616–630. https://doi.org/10.1007/s11528-022-00715-y

Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access*, *8*, 75264–75278. https://doi.org/10.1109/ACCESS.2020.2988510

Chen, X., Xie, H., Zou, D., & Hwang, G.-J. (2020). Application and theory gaps during the rise of artificial intelligence in education. *Computers and Education: Artificial Intelligence*, *1*, Article 100002. https://doi.org/10.1016/j.caeai.2020.100002

Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). Two decades of artificial intelligence in education: Contributors, collaborations, research topics, challenges, and future directions. *Educational Technology & Society*, *25*(1), 28–47. https://www.jstor.org/stable/48647028

Cukurova, M., Luckin, R., & Kent, C. (2020). Impact of an artificial intelligence research frame on the perceived credibility of educational research evidence. *International Journal of Artificial Intelligence in Education*, *30*(2), 205–235. https://doi.org/10.1007/s40593-019-00188-w

Çam, M.B., Çelik, N.C., Turan Güntepe, E. & Durukan, Ü.G. (2021). Öğretmen adaylarının yapay zekâ teknolojileri ile ilgili farkındalıklarının belirlenmesi / Determining teacher candidates' awareness of artificial intelligence technologies. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi / Mustafa Kemal University Journal of Social Sciences Institute*, *18*(48), 263–285 [in Turkish]. https://dergipark.org.tr/tr/pub/mkusbed/issue/65621/936301

Dalgıç, A., Yaşar, E., & Demir, M. (2024). ChatGPT and learning outcomes in tourism education: The role of digital literacy and individualized learning. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *34*, Article 100481. https://doi.org/10.1016/j.jhlste.2024.100481

Das, A.K. (2018). Translation and artificial intelligence: Where are we heading? *International Journal of Translation*, *30*(1), 1–26.

Dergaa, I., Chamari, K., Zmijewski, P., & Ben Saad, H. (2023). From human writing to artificial intelligence generated text: Examining the prospects and potential threats of ChatGPT in academic writing. *Biology of Sport*, *40*(2), 615–622. https://doi.org/10.5114/biolsport.2023.125623

Devedžić, V. (2004). Web intelligence and artificial intelligence in education. *Journal of Educational Technology & Society*, *7*(4), 29–39. https://drive.google.com/file/d/1yO_9IBkmdbq-gsfO1WpvyY1ZOfomIrpi/view?pli=1

Dhamija, P., & Bag, S. (2020). Role of artificial intelligence in operations environment: A review and bibliometric analysis. *The TQM Journal*, *32*(4), 869–896. https://doi.org/10.1108/TQM-10-2019-0243

Dogru, T., Line, N., Hanks, L., Acikgoz, F., Abbott, J., Bakir, S., Berbekova, A., Bilgihan, A., Iskender, A., Kizildag, M., Lee, M., Lee, W., McGinley, S., Mody, M., Onder, I., Ozdemir, O., & Suess, C. (2024). The implications of generative artificial intelligence in academic research and higher education in tourism and hospitality. *Tourism Economics*, *30*(5), 1083–1094. https://doi.org/10.1177/13548166231204065

Du, S., & Xie, C. (2021). Paradoxes of artificial intelligence in consumer markets: Ethical challenges and opportunities. *Journal of Business Research*, *129*, 961–974. https://doi.org/10.1016/j.jbusres.2020.08.024

Etikan, I., Abubakar Musa, S., & Alkassim, R.S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1–4. https://doi.org/10.11648/j.ajtas.20160501.11

Gendron, Y., Andrew, J., & Cooper, C. (2022). The perils of artificial intelligence in academic publishing. *Critical Perspectives on Accounting, 87*, Article 102411. https://doi.org/10.1016/j.cpa.2021.102411

Gocen, A., & Aydemir, F. (2020). Artificial intelligence in education and schools. *Research on Education and Media*, *12*(1), 13–21. https://doi.org/10.2478/rem-2020-0003

Guleria, A., Krishan, K., Sharma, V., & Kanchan, T. (2023). ChatGPT: Ethical concerns and challenges in academics and research. *Journal of Infection in Developing Countries*, *17*(9), 1292–1299. https://doi.org/10.3855/jidc.18738

Güner, D., & Çılgınoğlu, H. (2024). Artificial intelligence perspective on tourism education. *Tourism and Recreation*, *6*(1), 149–157. https://doi.org/10.53601/tourismandrecreation.1445766

Haenlein, M., & Kaplan, A. (2019). A brief history of artificial intelligence: On the past, present and future of artificial intelligence. *California Management Review*, *61*(4), 5–14. https://doi.org/10.1177/0008125619864925

Haleem, A., Javaid, M., & Singh, R.P. (2022). An era of ChatGPT as a significant futuristic support tool: A study on features, abilities, and challenges. *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, *2*(4), Article 100089. https://doi.org/10.1016/j.tbench.2023.100089

Huang, Y.-H. (2024). Exploring the implementation of artificial intelligence applications among academic libraries in Taiwan. *Library Hi Tech*, *42*(3), 885–905. https://doi.org/10.1108/LHT-03-2022-0159

Huang, J., Saleh, S., & Liu, Y. (2021). A review of artificial intelligence in education. *Academic Journal of Interdisciplinary Studies, 10*(3), 206–217. https://doi.org/10.36941/ajis-2021-0077

Humble, N., & Mozelius, P. (2022). The threat, hype, and promise of artificial intelligence in education. *Discover Artificial Intelligence*, *2*, Article 22. https://doi.org/10.1007/s44163-022-00039-z

Ivanov, S. (2023). The dark side of artificial intelligence in higher education. *The Service Industries Journal*, *43*(15–16), 1055–1082. https://doi.org/10.1080/02642069.2023.2258799

Jafari, F., & Keykha, A. (2024). Identifying the opportunities and challenges of artificial intelligence in higher education: A qualitative study. *Journal of Applied Research in Higher Education, 16*(4), 1228–1245. https://doi.org/10.1108/JARHE-09-2023-0426

Kaul, V., Enslin, S., & Gross, S.A. (2020). History of artificial intelligence in medicine. *Gastrointestinal Endoscopy*, *92*(4), 807–812. https://doi.org/10.1016/j.gie.2020.06.040

Khanzode, C.A., & Sarode, R.D. (2020). Advantages and disadvantages of artificial intelligence and machine learning: A literature review. *International Journal of Library & Information Science (IJLIS)*, *9*(1), 30–36. https://doi.org/10.17605/OSF.IO/GV5T4

Khosravi, H., Shum, S.B., Chen, G., Conati, C., Tsai, Y.-S., Kay, J., Knight, S., Martinez-Maldonado, R., Sadiq, S., & Gašević, D. (2022). Explainable artificial intelligence in education. *Computers and Education: Artificial Intelligence*, *3*, Article 100074. https://doi.org/10.1016/j.caeai.2022.100074

Kim, J.-Y., & Heo, W. (2022). Artificial intelligence video interviewing for employment: Perspectives from applicants, companies, developer and academicians. *Information Technology & People*, *35*(3), 861–878. https://doi.org/10.1108/ITP-04-2019-0173

Kuleto, V., Ilić, M., Dumangiu, M., Ranković, M., Martins, O.M.D., Păun, D., & Mihoreanu, L. (2021). Exploring opportunities and challenges of artificial intelligence and machine learning in higher education institutions. *Sustainability*, *13*(18), Article 10424. https://doi.org/10.3390/su131810424

Luan, H., Geczy, P., Lai, H., Gobert, J., Yang, S.J.H., Ogata, H., Baltes, J., Guerra, R., Li, P., & Tsai, C.-C. (2020). Challenges and future directions of big data and artificial intelligence in education. *Frontiers in Psychology: Section Educational Psychology*, *11*, Article 580820. https://doi.org/10.3389/fpsyg.2020.580820

Lewis, P.R., & Marsh, S. (2022). What is it like to trust a rock? A functionalist perspective on trust and trustworthiness in artificial intelligence. *Cognitive Systems Research*, *72*, 33–49. https://doi.org/10.1016/j.cogsys.2021.11.001

Li, X., Gao, Z., & Liao, H. (2023). The effect of critical thinking on translation technology competence among college students: The chain mediating role of academic self-efficacy and cultural intelligence. *Psychology Research and Behavior Management*, *16*, 1233–1256. https://doi.org/10.2147/PRBM.S408477

Livberber, T., & Ayvaz, S. (2023). The impact of artificial intelligence in academia: Views of Turkish academics on ChatGPT. *Heliyon*, *9*(9), Article e19688. https://doi.org/10.1016/j.heliyon.2023.e19688

Mapp, T. (2008). Understanding phenomenology: The lived experience. *British Journal of Midwifery*, *16*(5), 308–311. https://doi.org/10.12968/bjom.2008.16.5.29192

Marengo, A., Pagano, A., Pange, J., & Soomro, K.A. (2024). The educational value of artificial intelligence in higher education: A 10-year systematic literature review. *Interactive Technology and Smart Education*, *21*(4), 625–644. https://doi.org/10.1108/ITSE-11-2023-0218

Marrone, R., Taddeo, V., & Hill, G. (2022). Creativity and artificial intelligence – a student perspective. *Journal of Intelligence*, *10*(3), Article 65. https://doi.org/10.3390/jintelligence10030065

Metaxiotis, K., Ergazakis, K., Samouilidis, E., & Psarras, J. (2003). Decision support through knowledge management: The role of the artificial intelligence. *Information Management & Computer Security*, *11*(5), 216–221. https://doi.org/10.1108/09685220310500126

Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Sage Publications.

Montenegro-Rueda, M., Fernández-Cerero, J., Fernández-Batanero, J.M., & López-Meneses, E. (2023). Impact of the implementation of ChatGPT in education: A systematic review. *Computers*, *12*(8), Article 153. https://doi.org/10.3390/computers12080153

Morse, J.M. (2000). Determining sample size. *Qualitative Health Research*, *10*(1), 3–5. https://doi.org/10.1177/104973200129118183

Neophytou, R., Liasidou, S., Pipyros, K., & Christofi, A. (2025). Artificial intelligence driven adaptive learning methods in sustainable tourism education. *Worldwide Hospitality and Tourism Themes*, *17*(1), 120–131. https://doi.org/10.1108/WHATT-12-2024-0308

Osman, Z., Alwi, N.H., Khan, B.N.A., Jodi, K.H.M., Ismail, M.N., & Yusoff, Y. (2023). Deciphering academicians' usage of artificial intelligence among academicians in higher education institutions. *International Journal of Academic Research in Business & Social Sciences*, *13*(10), 1246–1264. http://doi.org/10.6007/IJARBSS/v13-i10/18983

Ouyang, F., & Jiao, P. (2021). Artificial intelligence in education: The three paradigms. *Computers and Education: Artificial Intelligence*, *2*, Article 100020. https://doi.org/10.1016/j.caeai.2021.100020

Qutoshi, S.B. (2018). Phenomenology: A philosophy and method of inquiry. *Journal of Education & Educational Development*, *5*(1), 215–222. https://journals.iobm.edu.pk/index.php/joeed/article/view/157

Popenici, S.A.D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning*, *12*, Article 22. https://doi.org/10.1186/s41039-017-0062-8

Ray, P.P. (2023). ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope. *Internet of Things and Cyber-Physical Systems*, *3*, 121–154. https://doi.org/10.1016/j.iotcps.2023.04.003

Renkema, M., & Tursunbayeva, A. (2024). The future of work of academics in the age of artificial intelligence: State-of-the-art and a research roadmap. *Futures*, *163*, Article 103453. https://doi.org/10.1016/j.futures.2024.103453

Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. *International Journal of Artificial Intelligence in Education*, *26*, 582–599. https://doi.org/10.1007/s40593-016-0110-3

Ryan, M. (2020). In AI we trust: Ethics, artificial intelligence, and reliability. *Science and Engineering Ethics*, *26*(5), 2749–2767. https://doi.org/10.1007/s11948-020-00228-y

Samala, A.D., Rawas, S., Wang, T., Reed, J.M., Kim, J., Howard, N., & Ertz, M. (2025). Unveiling the landscape of generative artificial intelligence in education: A comprehensive taxonomy of applications, challenges, and future prospects. *Education and Information Technologies*, *30*, 3239–3278. https://doi.org/10.1007/s10639-024-12936-0

Saputra, I., Astuti, M., Sayuti, M., & Kusumastuti, D. (2023). Integration of artificial intelligence in education: Opportunities, challenges, threats and obstacles. A literature review. *Indonesian Journal of Computer Science*, *12*(4), 1590–1600. https://doi.org/10.33022/ijcs.v12i4.3266

Schiff, D. (2021). Out of the laboratory and into the classroom: The future of artificial intelligence in education. *AI & Society. Knowledge, Culture and Communication*, *36*(1), 331–348. https://doi.org/10.1007/s00146-020-01033-8

Shorey, S., & Ng, E.D. (2022). Examining characteristics of descriptive phenomenological nursing studies: A scoping review. *Journal of Advanced Nursing*, *78*(7), 1968–1979. https://doi.org/10.1111/jan.15244

Stokes, D., & Bergin, R. (2006). Methodology or "methodolatry"? An evaluation of focus groups and depth interviews. *Qualitative Market Research: An International Journal*, *9*(1), 26–37. https://doi.org/10.1108/13522750610640530

Tabata, L.N., & Johnsrud, L.K. (2008). The impact of faculty attitudes toward technology, distance education, and innovation. *Research in Higher Education*, *49*, 625–646. https://doi.org/10.1007/s11162-008-9094-7

Talan, T. (2021). Artificial intelligence in education: A bibliometric study. *International Journal of Research in Education and Science (IJRES)*, *7*(3), 822–837. https://doi.org/10.46328/ijres.2409

Tao, H.B., Diaz Pérez, V.R., & Guerra, Y.M. (2019). Artificial intelligence and education: Challenges and disadvantages for the teacher. *Arctic Journal*, *72*(12), 30–50.

Thomas, R., Bhosale, U., Shukla, K., & Kapadia, A. (2023). Impact and perceived value of the revolutionary advent of artificial intelligence in research and publishing among researches: A survey-based descriptive study. *Science Editing*, *10*(1), 27–34. https://doi.org/10.6087/kcse.294

Turing, A.M. (1950). Computing machinery and intelligence. *Mind*, *49*(236), 433–460. https://doi.org/10.1093/mind/LIX.236.433

Wang, T., Lund, B.D., Marengo, A., Pagano, A., Mannuru, N.R., Teel, Z.A., & Pange, J. (2023). Exploring the potential impact of artificial intelligence (AI) on international students in higher education: Generative AI, chatbots, analytics, and international student success. *Applied Science*, *13*(11), Article 6716. https://doi.org/10.3390/app13116716

Wardat, Y., Tashtoush, M.A., Ali, R.A., & Saleh, S. (2024). Artificial intelligence in education: Mathematics teachers' perspectives, practices and challenges. *Iraqi Journal for Computer Science and Mathematics*, *5*(1), Article 20, 60–77. https://doi.org/10.52866/ijcsm.2024.05.01.004

Xie, X., & Wang, T. (2024). Artificial intelligence: A help or threat to contemporary education: Should students be forced to think and do their tasks independently? *Education and Information Technologies*, *29*(3), 3097–3111. https://doi.org/10.1007/s10639-023-11947-7

Yağar, F., & Dökme, S. (2018). Niteliksel araştırmaların planlanması: Araştırma soruları, örneklem seçimi, geçerlik ve güvenirlik / Planning of qualitative researches: Research questions, samples, validity and reliability. *Gazi Sağlık Bilimleri Dergisi*, *3*(3), 1–11 [in Turkish]. https://dergipark.org.tr/tr/download/article-file/563245

Yıldırım, A., & Şimşek, H. (2016). *Sosyal bilimlerde. Nitel araştırma yöntemleri*. Seçkin.

Yuskovych-Zhukovska, V., Poplavska, T., Diachenko, O., Mishenina, T., Topolnyk, Y., & Gurevych, R. (2022). Application of artificial intelligence in education. Problems and opportunities for sustainable development. *BRAIN: Broad Research in Artificial Intelligence and Neuroscience*, *13*(1 sup1), 339–356. https://doi.org/10.18662/brain/13.1Sup1/322

Zawacki-Richter, O., Marin, V.I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education*, *16*, Article 39. https://doi.org/10.1186/s41239-019-0171-0

Zeb, A., Rehman, F.U., Bin Othayman, M., & Rabnawaz, M. (2025). Artificial intelligence and ChatGPT are fostering knowledge sharing, ethics, academia and libraries. *The International Journal of Information and Learning Technology*, *42*(1), 67–83. https://doi.org/10.1108/IJILT-03-2024-0046

Zhu, L., Ren, T., & Xu, P. (2023). Reforms and applications of online practice teaching in the field of new engineering. *International Journal of Technology Enhanced Learning (IJTEL)*, *15*(1), 14–25. https://doi.org/10.1504/IJTEL.2023.127934

Zheng, C., Wang, D., Wang, A.Y., & Ma, X. (2022). Telling stories from computational notebooks: AI-assisted presentation slides creation for presenting data science work. In S. Barbosa, C. Lampe, C. Appert, D.A. Shamma, S. Drucker, J. Williamson & K. Yatani (Eds.), *CHI'22: Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* (Article 53). Association for Computing Machinery. https://doi.org/10.1145/3491102.3517615