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Teachers' Perceptions and Agency in Implementation of Artificial Intelligence: The Case of Uzbekistan



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Abstract

The adoption of artificial intelligence (AI) technologies, such as generative AI (GenAI), follows a continuum, beginning with awareness and progressing to active engagement and leadership. The extent of its successful implementation, its impact on educators' evolving roles, and the actual picture in the field need to be scrutinized. The effects of these dramatic changes are best known to those at the microlevel: teachers in the classroom. Therefore, to explore the status quo in the Uzbekistani context, the current study investigated the perceptions of teachers from 34 local and international higher education institutions representing five regions of the country. An online questionnaire was employed to survey English for academic purposes and English for specific purposes teachers' ($N = 141$) general perceptions and experiences with AI. Meanwhile, adding breadth and depth to the research question, semi-structured interviews informed by a conceptual framework were used to probe teachers' ($n = 10$) experiences, attitudes, and engagement with GenAI in their teaching activities and related professional work. The findings reveal that teachers are generally positive about implementing AI technologies in the educational process and have achieved a convincing degree of familiarity with a range of tools for various pedagogical purposes. The teachers' responses also showed that they have achieved GenAI adopter and GenAI collaborator roles but have yet to gain enough knowledge and expertise to become GenAI innovators.

Keywords: Generative AI, teachers' engagement, educators' agency, ethical issues, teaching with AI

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Introduction

In recent years, Uzbekistan has been actively supporting and investing in the advancement of artificial intelligence (AI) technologies across various sectors, including initiatives to expand education and training in AI-related fields. According to the Center for Progressive Reforms, the strategic expansion of AI-focused projects has resulted in the country becoming Central Asia's leader in the AI Readiness Index (Abdurayimov, 2024). The report notes that the country has secured 70th place globally and first place in Central Asia. In addition, Presidential Resolution No. RP-358 (the "Digital Uzbekistan 2030" strategy) highlights the nation's further commitment to developing AI technologies across many domains, including education (Lex.uz, 2024).

However, despite the improving trends of AI's integration in Uzbekistan, its integration into higher education (HE) and management systems is still in its "infancy" (Hakimova et al., 2024, p. 72). Hakimova et al. explained that despite educational reforms, one major setback experienced in HE is the shortage of professionals who are skilled in AI. Although some universities are attempting to adopt the curriculum and assessment practices, educators continue to face mixed experiences. These conditions call for further investigation into the current status, the provision of needs-based teacher training, and the adoption of AI policies to regulate the emerging trends in the education sector.

AI is the science of developing systems that can perform complex tasks traditionally associated with humans (Gibson et al., 2023). AI also facilitates the process of second language learning by developing English as a foreign language (EFL) learners' autonomous learning and enabling them to create personally tailored learning, as AI can provide immediate feedback and be available at any time or place (Derakhshan & Ghiasvand, 2024). Some insist that AI, particularly GenAI, has the potential to dramatically transform education and improve the learning experience for students. For instance, GenAI can provide personalized feedback and support to students, helping them identify their weak areas and adaptively improve their skills and knowledge (Dinçer & Bal, 2024; Kasneci et al., 2023). One outstanding benefit of AI in education is its role in the early stages of writing, including brainstorming and outlining (Barrett & Pack, 2023). In addition to these advantages, AI can also provide a platform for asynchronous communication (Cotton et al., 2023) by taking up the role of an interlocutor and supporting interactions with students (Javier & Moorhouse, 2023).

Teachers have also been found to use AI for adapting the curriculum, moving toward making the students' educational experiences more engaging, relevant, and learner-centered (Karataş et al., 2024). It enables teachers to perform human-like dialogue, elaborate on grammar-related questions, help plan lessons, and produce multimodal content (Kohnke et al., 2023). Therefore, the report on UNESCO's 'AI competency framework for students' highlights the necessity of including AI learning objectives in the curricula for students on a global scale to ensure they engage with AI meaningfully and safely (Miao & Shiohira, 2024). While integrating AI into pedagogical practices, teachers are also navigating various roles and responsibilities.

However, despite these advantages of AI in education, it also poses challenges that should be alleviated with effective policies and timely measures (Farrelly & Baker, 2023). Educators need to ensure that the use of AI adheres to integrity in pedagogy, equity, and social justice (Kohnke & Zou, 2025). One concern is the potential for cheating among students, which undermines academic integrity (Arowosegbe et al., 2024; Derakhshan & Ghiasvand, 2024; Neff et al., 2024; Sitheeque, 2024). The use of AI to plagiarize written assignments is a significant issue in this context (Cotton et al., 2023; Chan, 2023). It is concerning that 94.1% of educators reported their universities had no AI usage policy in place and 89.7% admitted to never educating students about ethical AI use (Barrett & Pack, 2023). Thus, guidelines for ethical implementation of AI in higher education institutions should be adopted. Nevertheless,

although some schools prohibit AI-driven platforms, many educational establishments do not, indicating their confidence that their academic integrity policies are robust enough to adapt to emerging technologies (Barrett & Pack, 2023).

Although prior studies have investigated teachers' perceptions of and experiences with AI, only a few have empirically explored the case of teachers in Uzbekistani HE institutions. For example, Shakib Kotamjani et al.'s (2024) qualitative study focused on the perceptions of integrating AI in education among teachers ($N = 15$), representing various domains such as engineering, dentistry, and language education at one international university. They found that the participants generally had a positive attitude toward using AI for developing content, assessment, and research; however, they were negative about the potential influence of AI on creativity and bias in the generated materials. Later, Ugli et al. (2025) explored the perspectives of EFL teachers ($N = 7$) from seven universities on ChatGPT, concentrating on the benefits and ethical matters. Their findings reinforce the results revealed by Shakib Kotamjani et al. (2023), which show that teachers' attitudes toward the chatbot were positive, especially in providing feedback, promoting autonomy in learning, and checking grammar. Their informants expressed concerns about over-reliance, students' lack of ethical knowledge, and limitations in developing critical thinking caused by ChatGPT. Unlike previous studies, however, the present study expands the scope, adopts mixed methods, and covers a larger participant pool for improved representation.

Thus, considering that teachers' views vary widely in terms of their level of trust, familiarity, and implementation of AI technologies, it is imperative to explore the perceptions of university educators. They are central figures in the field and can provide details of their first-hand experiences. English for academic purposes (EAP) and English for specific purposes (ESP) teachers, unlike their EFL teacher counterparts, are frequently involved in activities, including plagiarism detection, academic writing support, and development of domain-specific materials – aspects where AI's role is significant. Moreover, there is a notable gap in empirical research investigating the perspectives and agency of university EAP and ESP teachers in their implementation of AI in the Uzbekistani context. Understanding this perspective is crucial for raising awareness among English language teaching (ELT) professionals about the current status quo, thereby informing policy development and teacher training, particularly in light of Uzbekistan's national strategy for the integration of AI in education. This mixed-methods study adopts Zhai's (2024) four-stage framework (awareness, exploration, integration, and innovation) to explore the perceptions and experiences of 141 EAP and ESP teachers working in 34 HE institutions located across five regions of Uzbekistan. Based on their responses, the framework will shed light on the teachers' opinions and experiences in integrating AI into their practices, as well as their transition across four stages of using GenAI. It will also identify their agency in the implementation of GenAI, including the nature and level of their adoption and engagement. Thus, the research questions (RQs) are as follows:

RQ1: How do the EAP and ESP teachers perceive the impact of AI on their pedagogical practices?

RQ2: What are the roles of teachers and their engagement in the process of adopting GenAI into their pedagogical practices?

Literature Review

AI is a tool that is capable of producing academic content at a level similar to human-authored work, which raises educators' concerns (Barrett & Pack, 2023; Sullivan et al., 2023) and “public awareness and appreciation of language” (Chapelle, 2024, p. 534). The current study is underpinned by Zhai's (2024) comprehensive conceptual framework, which underlines the significant effect of GenAI on teachers' “roles and agencies” (p. 2). Zhai (2024) asserts that in today's education system, the employment of AI technologies is burgeoning, which requires timely adaptation to these developing trends. On the basis of the teachers' opinions, knowledge, acceptance, and practices, we can determine their

present roles and agencies, which this study attempted to accomplish. This framework is relevant to the current research because it supports the investigation of where the Uzbekistani teachers position themselves along the continuum, and how their perceptions and lived experiences reflect the four stages of agency.

The initial awareness phase is characterized by teachers' initial familiarization, observation, and curious yet skeptical and sporadic engagement with simple GenAI tools. The role that describes the teachers at this point is that of a GenAI observer. Meanwhile, GenAI adopters are less skeptical and engage more actively with AI tools to generate teaching materials for supplementing their classes in the next stage: exploration. The GenAI collaborator role at the integration stage is characterized by teachers' consistent and purposeful integration of GenAI tools into educational processes, where the tools are not viewed as a mere supplement but as a core element. These are avid learners with a proactive mindset toward professional development, envisioning GenAI's future possibilities in boosting the effectiveness of instruction and personalized learning. Finally, the GenAI innovators at the innovation stage represent pioneers, mentors, and thought leaders capable of leading creative initiatives and engaging in GenAI research. They can transform learning processes with their advanced knowledge and vision for promoting GenAI's adoption (Zhai, 2024).

Perceptions about Integrating AI

Integrating AI into education is still new, and educators perceive it in different ways. Many AI tools are believed to help with learning processes, such as providing individual feedback (Topal, 2024) and increasing students' engagement (Firat, 2023; Topal, 2024). Teachers appreciate how AI-supported learning can occur anywhere and anytime (Dinçer & Bal, 2024). Learners are also optimistic about the role of AI in improving education, highlighting its utility (Barrett & Pack, 2023; Derakhshan & Ghiasvand, 2024). On the other hand, educators also express concern that using AI may lead to a decrease in conventional teaching methods and, hence, a minimal need for human input (Handley, 2024). Kim and Kim (2022) note that AI is not transparent and threatens the role of teachers. This fear is emphasized by Thorne (2024), suggesting that language teachers should acquire AI literacy to properly assess the benefits and risks of technology.

Perspectives seem to vary, depending on individuals' ages and experiences. A comparative study by Alharbi and Khalil (2023) examines the views of younger and older teachers regarding AI, revealing that the former tend to favor it or remain neutral, appreciating its efficiency in instructional approaches. Meanwhile, their older counterparts display resistance, expressing concerns about the potential of replacing traditional instructions and suggesting that AI should play the role of an additional support mechanism. These mixed opinions about implementing GenAI in educational practices (Barrett & Pack, 2023) can also be attributed to the lack of knowledge about its role. For instance, Pack and Maloney (2024) argued that teachers with limited familiarity with AI are hesitant to use it. Similarly, Kadan et al. (2024) found that teachers were ambivalent, viewing AI as a helpful tool that could reshape classroom teaching. In the context of language learning, Chapelle (2024) suggests that using AI requires deliberate reflection on the part of language professionals. This means that language teachers must redefine their role as instructors and determine how AI can enhance or even replace their teaching methods. Therefore, forming a positive perception of AI requires trust and professional development (Nazaretsky et al., 2022).

Opportunities and Challenges of Integrating AI

The advantages of AI include the ability to customize learning experiences; provide feedback that considers learning styles, speed, and abilities; and offer opportunities for learners to practice skills

outside classroom hours (Dinçer & Bal, 2024). AI can reduce teaching workload, generate instructional materials, and facilitate traditional teaching approaches (Derakhshan & Ghiasvand, 2024). These researchers also highlight the utility of AI, demonstrating how it can streamline assessment processes by offering suggestions for rubric development and providing immediate written feedback on learners' tasks. Indeed, AI contributes to improving students' performance on complex linguistic tasks (Ou et al., 2024), as it can give feedback on linguistic errors and sample texts (Fan et al., 2024). Similarly, Topal (2024) emphasized how AI enhances learners' autonomy through immediate feedback and 24/7 access. Meanwhile, Karataş et al. (2024) suggest that GenAI tools help make the curriculum more dynamic and engaging by enhancing relevance. These findings show that AI is multifaceted. The most significant advantage of AI is that it can provide instant feedback and guidance during the learning process. Another significant opportunity is the role that AI plays in autonomous learning. Topal (2024) argues that AI tools like ChatGPT can help students improve their vocabulary, grammar, and coherence in writing independently.

However, over-reliance on AI (Dilzhan, 2024) can reduce students' critical thinking and creativity (Firat, 2023). Analogously, Derakhshan and Ghiasvand (2024) claimed ChatGPT can even "kill creativity" and "discourage students' critical thinking" (p. 1259) and lead to the fabrication of information in assignments. These authors predict that AI can trigger cheating among students and neglect of paralinguistic aural tests, leaving distorted images of students' genuine language competencies. There are also risks of students' dependence on AI and the propagation of bias arising from algorithmic limitations (Javier & Moorhouse, 2024). Furthermore, infrastructural and training gaps, particularly in developing contexts (Uddin et al., 2024), are additional glaring examples. In fact, issues with the digital divide and e-cheating have frequently been raised (Dilzhan, 2024; Waltzer et al., 2023), and teachers' readiness to integrate AI has been identified as a barrier (Kong et al., 2024). Accordingly, if educators are not familiar with the use of AI in pedagogy, they may struggle to integrate it into teaching.

Concerns about Academic Integrity

Integrating AI into education brings about numerous opportunities, but it also poses significant risks to ethical and academic integrity. Pretorius (2023) underlines that although AI can help learning, it also raises questions about students' use of AI to write their assignments. Dishonest use of AI tools to generate essays and failing to acknowledge the sources (Barrett & Pack, 2023; Yeo, 2023) or so-called 'AI-giarism' – the misuse of AI (Ngo & Hastie, 2025) – are only some examples. What exacerbates the situation is that many teachers may not differentiate between a student's writing and AI's writing (Kadan et al., 2024). In response to these trends, experts call for robust ethical guidelines (Ngo & Hastie, 2025) and culturally responsive policies consistent with the institution's mission and values (Yusuf et al., 2024) to promote responsible AI use. Moreover, AI-generated content poses a challenge to conventional assessment tools, thereby making educators consider how to assess students' learning and performance (Firat, 2023). For these reasons, the importance of AI literacy for responsible AI use should not be underestimated; both educators and students must recognize AI's potential risks, prejudice, and ethical issues (Kong et al., 2024).

Pedagogical Implications and Institutional Readiness

The integration of AI in learning processes can be effective if innovative pedagogical approaches and proper teacher training support it. In this regard, Walter (2024) emphasized the importance of AI literacy and prompt engineering for both educators and learners, while Ngo and Hastie (2025) proposed a framework for including AI literacy in EAP programs. Similarly, cross-disciplinary AI curricula prepare students for AI-driven environments, as suggested by Southworth et al. (2023). Therefore, O'Dea

and O'Dea (2023) recommend using AI tools in conjunction with traditional teaching methods to avoid over-reliance on technology and promote critical thinking.

As a result of the increased use of AI in the educational sector, researchers suggest that teachers should employ strategies to reduce the negative impacts of AI while embracing its positive aspects. According to Thorne (2024), AI should be viewed as a co-evolutionary tool that adds value to, not replaces, language education. One effective way is the application of AI in teaching support. For instance, Fan et al.'s (2024) proposed blended approach of using AI and teacher feedback seems quite feasible. This model enables students to take advantage of the fast service offered by AI while still receiving guidance from their teachers. Hence, educators should also receive digital literacy training to use AI responsibly and effectively (Firat, 2023). Despite many discussions about using AI, many teachers remain unclear about its capabilities and limitations.

Institutional readiness is a crucial factor that determines the successful integration of AI in education. Many HE institutions are unprepared for the change (Barrett & Pack, 2023); therefore, there is a need to develop policies and models of hybrid education. Kadan et al. (2024) argue that most schools are unprepared for the AI revolution because of the lack of training and guidelines on using AI in teaching and assessment. Meanwhile, Derakhshan and Ghiasvand (2024) consider that infrastructure and training gaps hinder AI's integration into educational systems. These gaps seem to result in uneven policies that lead to unequal access to students' learning opportunities, as Ou et al. (2024) also highlighted. The authors suggested that these gaps can be addressed through investment in teacher training, infrastructure, and curricular change, managed within Uzbekistan's cultural and institutional context. Integrating AI into education is possible only with the support of institutions and policies. Yusuf et al. (2024) suggested that a phased approach to implementation, beginning with pilot projects to build institutional capacity, is useful. Similarly, Ng et al. (2021) stressed the importance of AI policies covering ethical issues, data security, and academic integrity. Readiness is also a function of infrastructure and resources in the institution. In their article, Kong et al. (2024) argued that teacher training programs should include AI literacy components to enable teachers to integrate AI into their teaching. In the same vein, Thorne (2024) calls for policies that define the ethical use of AI and ensure that it improves education rather than substituting traditional pedagogy.

In conclusion, this review of the literature provides a nuanced understanding of the opportunities and challenges of integrating AI in teaching and learning environments. AI tools present opportunities for customization of the learning experience and enhanced engagement, but ethical concerns, infrastructural gaps, and pedagogical challenges remain significant issues. For the HE institutions of Uzbekistan, a balanced approach – policy support, teacher training, and pedagogical innovation – is necessary to enjoy the benefits of AI without compromising academic integrity.

Methods

Study Participants

The participants in the questionnaire constituted EAP and ESP teachers ($N = 141$), with ages ranging from 20 to 55. The largest respondent age group was those aged 30–41 (57%), whereas about one-third were aged 20–30 (32%); finally, almost 12% of the remaining participants were between 42 and 55 years old. Most questionnaire respondents reported their sex as female (78%), while their male counterparts comprised merely 22%. The participants represented 34 universities, including local ($n = 12$) and international English-medium ($n = 12$) HE institutions located in five regions of the country: Andijan, Bukhara, Jizzakh, Samarkand, and Tashkent.

Among the surveyed teachers, most had a Master's degree (78%) or a PhD (15%), but some had a BA degree (7%). Demographic questions also revealed that the teachers had differing years of service. Overall, four main subgroups could be observed – most teachers had substantial teaching experience (6–10 years; 30%), while similar proportions (about 23% each) had up to 5 years, 11–15 years, or 16–20 years of experience. The last 9% were the most experienced teachers, having taught between 21 and 29 years. The interview participants came from the same pool of questionnaire respondents and represented both local ($n = 5$) and international ($n = 5$) universities from 5 regions.

Ethical Considerations

The researchers initially submitted their application with a description of the study and the tools for review by the Research Ethics Committee at Westminster International University in Tashkent. Having received the approval of the Ethics Panel, the researchers piloted the research instruments before collecting primary data. Information about the study, with the support letters requesting assistance in disseminating the questionnaire among ESP and EAP teachers, was emailed to the research departments of other HE institutions. During the data collection phase, the researchers provided the questionnaire respondents with information about the purposes of the study, its significance, and instructions for completion in the description section of Google Forms. It also ensured the complete anonymity and confidentiality of their responses.

Regarding the interviews, each informant was provided with a consent form containing information about the researchers, the aim, and the procedure. With the consent of the invited teachers, the interviews were also audio recorded. The recordings were transcribed on the <https://goodtape.io/tapes/new> website. Anonymized pseudonyms (for example, R1, R2) have been used to maintain confidentiality.

Research Process and Instruments

This mixed-methods study was conducted in two phases.

Phase One

Over three months, the researchers disseminated the online questionnaire and gathered data from the HE institutions in the country. The 19-item online questionnaire had a dual aim: to collect demographic information, and to explore the EAP and ESP teachers' perceptions and experiences with using AI in their teacher-related activities. This data collection tool was chosen to capture the voices of university teachers from various universities across the country. The quantitative data analysis, particularly the descriptive statistics (frequencies and percentages) from the questionnaire, was conducted using the statistical analysis program JASP 0.17.2.1.

Phase Two

The researchers used six open-ended questions in the interviews. The questions were informed by Zhai's (2024) framework. The framework generally focuses on exploring teachers' perceptions, acceptance, knowledge, and practices of GenAI in four stages: awareness, exploration, integration, and innovation. Each stage, in turn, matches a prescribed role: GenAI observer, GenAI adopter, GenAI collaborator, and GenAI innovator. Table 1 shows how the questions were mapped as per Zhai's (2024) framework. Although some questions aimed to determine teachers' roles exclusively at one stage, others were more generic and aimed to assess their standing, depending on the nature of the answers.

Table 1 Mapped Interview Items based on Zhai's (2024) Framework

Awareness stage: GenAI observer	Exploration stage: GenAI adopter	Integration stage: GenAI collaborator	Innovation stage: GenAI innovator
1. How would you describe your overall opinion of using GenAI in your teaching practice?		5. How do you balance the use of AI with traditional teaching methods?	6. Looking ahead, what changes or improvements would you like to see in GenAI to support your teaching practice?
2. What concerns, if any, do you have regarding the use of AI in education? How do these concerns affect your willingness to integrate it?			
3. How do you perceive its ability to adapt to your teaching context?			
	4. What are some limitations or areas, if any, where GenAI falls short? (How do you handle them?)		

This phase involved conducting semi-structured interviews with 10 teachers. The candidates interested in participating in the second phase were chosen according to their voluntary self-nomination, which was indicated in the final section of the questionnaire. They were asked to leave their contact information if they wished to participate in the subsequent phase. The researchers chose to conduct semi-structured interviews as an instrument because they allow an in-depth exploration of teachers' engagement with GenAI. In addition, interviews facilitate the "discovery and elaboration of information that is important to the participant" (Gill et al., 2008, p. 291). Although the interviews with teachers working and living in the capital city were held face-to-face, the interviews with those in the other four regions were conducted online on the Zoom platform.

Interview data were analyzed following the deductive qualitative approach (Fife & Gossner, 2024). Firstly, the two raters developed a coding system based on the interview data, considering the relationships, similarities, and differences across data segments. Analysis and coding involved using induction and deduction to identify four types of evidence: supporting, contradicting, refining, and expanding the evidence.

Results

The current section presents the results gathered through the two research instruments used in the study. To provide a comprehensive description, the data are organized according to the research questions. Overall, the research outcomes indicated the teachers' positive perceptions and average familiarity with AI technologies for performing different teacher roles.

Findings for RQ1: Teachers' Perceptions of AI's Impact

The questionnaire respondents were asked to rate their attitude toward using AI technologies on a 5-category Likert scale (from strongly negative to strongly positive) (Figure 1). The results showed the

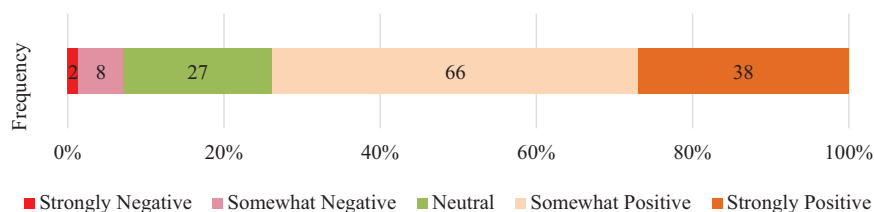
**Figure 1** Teachers' Attitudes to Using AI.

Table 2 *Applications of AI*

Values	Frequency	%
Design teaching materials, such as exercises and quizzes	97	74.6
Find answers to questions and get information from virtual assistants and chatbots	58	44.6
Develop parts of lesson plans	66	50.8
Teach language skills (listening, reading, writing, speaking)	46	35.4
Grade students' work, such as assignments, quizzes, and exams	28	21.5
Give immediate feedback to students	21	16.2
Identify plagiarism or AI-generated content in students' work	77	59.2
Identify areas of difficulty and offer guidance to students	16	12.3
Suggest relevant resources according to the students' needs	38	29.2
Track students' progress	13	10
Others (to generate ideas for research, rubrics and criteria, and assessment specifications or to find interactive materials)	4	3.2

prevalence of a positive attitude, with a total of 104 teachers (73.7%) evaluating it as somewhat positive or strongly positive. Though 27 respondents (19.1%) indicated their attitude to be neutral, only 10 reported a negative or strongly negative opinion (7%).

In response to the question on teachers' purposes for employing AI tools, the data indicated that the most frequently selected reason was for designing teaching materials, mentioned by a significant proportion (74.6%) (Table 2). The following two primary purposes were identifying plagiarism (59.2%) and developing lessons (50.8%). A considerable percentage indicated that finding answers to questions (44.6%) and teaching language skills (35.4%) were reasons for using AI. Assessment and feedback provision were cited as the next most frequent purposes for using AI, at 21.5% and 16.2%, respectively. Regarding the least cited reasons, over 20% of teachers reported using AI to monitor students' progress and provide targeted support based on their individual weaknesses and needs.

Table 3 provides information about the perceived benefits and drawbacks of employing AI in educational processes, categorized from most to least often chosen. A significant majority (84.4%) suggested that its primary benefit was its capacity to save time, and almost two-thirds pointed to identifying cases of cheating as another major benefit of AI. Three more advantages that over half of the respondents reported were producing quality materials (58.2%), tailoring them to the learners (55.3%), and having the potential to develop students' creativity (52.5%). Finally, teachers underlined the beneficial role of AI in enhancing student engagement (42.6%) and assistance with providing feedback (40.4%).

Evidently, one primary concern of most teachers was their students' over-reliance on AI, at 83%. A similar number of questionnaire respondents indicated two issues – academic dishonesty and teachers' over-reliance on AI (58.9% each). Other issues that worry more than half of all teachers mentioned are the lack of knowledge in using AI (41.1%), limitations of AI feedback (38.3%), and concerns about data privacy (36.2%). The four remaining issues were problems with facilities (30.5%), limitations of AI in understanding context (24.8%), the difficulty of adopting AI in the curriculum (24.8%), and a decrease in teachers' significance (22.7%).

Moving on to qualitative findings, a deductive thematic analysis was conducted to explore the interviewed teachers' agency in relation to GenAI, in line with Zhai's (2024) framework. Firstly, the interviewed teachers were asked to describe their overall perceptions and any concerns about implementing

Table 3 *Perceived Major Benefits and Drawbacks*

Frequency (%)	Benefits	Drawbacks	Frequency (%)
119 (84.4%)	Save time	Students' over-reliance	117 (83%)
92 (65.2%)	Identify cases of cheating	Academic dishonesty	83 (58.9%)
82 (58.2%)	Produce quality materials	Teachers' over-reliance	83 (58.9%)
78 (55.3%)	Tailor materials for learners	Teachers' lack of knowledge in using AI	58 (41.1%)
74 (52.5%)	Develop creativity in learners and teachers	Limitations of AI-provided feedback	54 (38.3%)
60 (42.6%)	Improve student engagement	Concerns about data privacy	51 (36.2%)
57 (40.4%)	Assist with feedback	Issues with facilities	43 (30.5%)
4 (2.8%)	Others	Limitations of AI in understanding context	35 (24.8%)
		Difficulty of adopting AI in the curriculum	35 (24.8%)
		Decrease in teachers' reputation and significance	32 (22.7%)

GenAI in their teaching practice. All informants demonstrated a positive attitude toward using GenAI in their teaching practice, particularly highlighting its efficiency (R3), helpfulness (R5, R6), and time-saving qualities (R6). The informants emphasized the assistance of AI in designing student-centered activities or materials, including skills-based exercises, sample texts, assessment rubrics, criteria, and checklists (R1, R2, R3, R4, R7, R8, and R10).

The interview respondents unanimously expressed their concerns about using GenAI, exemplifying multiple cases from their experiences. For example, R1 and R7 mentioned that they frequently observed students' plagiarism and cheating practices using GenAI. They also suggested that academia should develop accountability while encouraging the use of GenAI for learning purposes (R4, R7). Others, however, claimed that there are constraints in the content generated by GenAI, as they must change and adapt it to be appropriate for their students' age, mentality, and cultural, and religious values (R2, R3, R6, and R10).

The participants were asked to share their opinions on the adaptability of GenAI to the teaching context, and only one interviewee (R7) emphasized it, saying "I think it has great potential, but it just needs to be used in the right way to show its ability." The majority indicated GenAI's tendency to produce generic content, requiring iterative refinement. They remarked that it requires more detailed and refined input as a prompt or question (R1, R2, R3, R4, R5, R6, R9, R10). For instance, in the words of two respondents:

And it cannot properly understand what I want, though I try to give very detailed instructions. (R5)

I give a very detailed description of the task when I describe the context, when I describe the setting and include the level of the students and my group... but still, you know, I sometimes still have to adapt it, I have to be changing it further. (R3)

Finally, the results indicated that the interviewed teachers have a mainly positive opinion about the role of AI in education. The questionnaire findings revealed the practical qualities of AI, with the majority describing it as time-saving and effective in material design and lesson planning. The qualitative results

obtained from the interviews reinforce these perceptions, as the interviewees mentioned GenAI's ability to support creative and student-centered learning. In addition, teachers expressed reservations about issues such as plagiarism, over-reliance on AI, and a lack of contextual sensitivity in AI-generated content, which necessitates tailoring the materials to learners' cultural needs. Hence, while AI is perceived as a valuable instructional assistant, its effective implementation is subject to teachers' ability to ensure the relevance and academic integrity of the output.

Findings for RQ2: Teachers' Roles and Engagement with GenAI

The results indicate that teachers have moved beyond the awareness stage of AI adoption according to Zhai's framework (2024). The explorations into teachers' experiences showed that an overwhelming majority (90.1%) admitted using AI technology in their teaching experiences (Table 4). However, their familiarity with AI varied, with 40.4% describing themselves as moderately familiar, 37.6% as somewhat familiar, and 7.8% as extremely familiar. Nevertheless, the frequency of implementing AI showed different patterns, with an equal number of respondents choosing 1–3 times (rarely) and 10 times a month (usually), each at 29.1%. Most teachers also answered negatively when asked about receiving any training on using AI technologies. They reported conducting self-exploration and learning (31.9%) or having an interest in receiving training (37.6%). Only a quarter of the respondents answered positively about receiving comprehensive (8.5%) or some (19.1%) training.

The last section of the questionnaire aimed to explore the teachers' awareness and opinions on AI-related regulations and policies. According to the results, a substantial number of teachers (61.7%)

Table 4 *Teachers' Awareness and Use of AI*

Categories	Values	Frequency	%
Experience in using AI	Yes	127	90.1
	No	14	9.9
Level of familiarity with AI	Not at all familiar	3	2.1
	Slightly familiar	17	12.1
	Somewhat familiar	53	37.6
	Moderately familiar	57	40.4
	Extremely familiar (confident user)	11	7.8
	0 times (never)	11	7.8
	1–3 (rarely)	41	29.1
Monthly frequency of using AI	4–6 (sometimes)	29	20.6
	7–9 (often)	15	10.6
	10 (usually)	41	29.1
	Yes. Comprehensive training	12	8.5
Any training or professional development received in using AI	Yes. Some training	27	19.1
	None. But I have been doing my research and learning how to use AI	45	31.9
	None. But I would like some training	53	37.6
	None. I am not interested in receiving training	4	2.8
	The university allows teachers to use AI	87	61.7
Regulations/policies adopted in HE institutions that teachers are aware of	The university does not allow teachers to use AI	8	5.7
	Have no knowledge	46	32.6

reported that their university allowed teachers to use AI technology. At the same time, the remaining ones claimed that their workplace restricted its usage (5.7%), or they were unaware of any relevant university regulations (32.6%).

Concerning the interview data, teachers most often demonstrated the features of GenAI adopters and collaborators. In particular, the second question aimed to identify the limitations of GenAI in how the informants addressed them. Most commented on the quality of feedback GenAI provides to student papers, describing it as generic, standard, and sometimes shallow (R1, R2, R5, R6, and R8). Moreover, some commented on the importance of having a foundation in place before turning to GenAI's assistance. For example:

I don't start from zero because if I start from scratch, then I'm going to receive something too broad or too complex... I use AI to better it or to improve it, to further develop what I already have. So, I have to have, I think, a good foundation in order to build something of a higher quality. (R1)

Two interviewees (R3, R4) mentioned that processing a large volume of papers or obtaining sophisticated feedback would be expensive, because such features would be available only in the advanced subscription plans of GenAI platforms. Nonetheless, one teacher explained that the limitations are present because users need to know how to work with it, saying:

Again, this limitation is actually not on GenAI, but it's on us more because we do not know how to really give the correct prompt. (R9)

To gather information about the respondents' integration of AI into teaching practices, they were asked to elaborate on how they balance the use of GenAI with traditional teaching methods. The interviewees, by and large, emphasized that they commonly tried to maintain the "happy medium" (R9) and achieved it using several strategies. To exemplify, they admitted using traditional approaches as a foundation and then integrating "something from themselves", such as "AI and human-generated", "creative", "differentiated", and "tailored" activities (R2, R3, R4, R6, R7, and R8) for their learners' "emotional" (R7) needs; they also mentioned focusing on 21st-century communication skills (R2) and having elements of humor (R6).

However, a few respondents showed the characteristics of GenAI innovators. The last question elicited interviewees' expectations about the changes or improvements they would like to see in GenAI to support their teaching practices. Only one respondent (R1) admitted to not being adept at answering this question. In contrast, the remaining respondents highlighted the need to develop AI-driven technologies to reduce the workload of teachers (R2, R10) and increase Uzbekistani teachers' awareness about the recent AI-related developments (R4); some said that they would like to see GenAI produce more accurate and better quality images, realistic videos, and PowerPoint presentations based on prompts (R4, R5, R8) and making GenAI free for teachers (R6, R7).

In conclusion, the questionnaire findings revealed that most teachers have transitioned from the initial awareness stage, identifying themselves as confident AI users. The interview data also demonstrated that the teachers showed the characteristics of adopters and collaborators, using AI in lessons and materials. Meanwhile, they also exhibited clear awareness of the limitations and threats AI poses. Taken together, Uzbekistani teachers are actively engaged with AI in their pedagogical practices, but they experience a lack of institutional support, training, and expertise to advance toward the innovator stage.

Discussion

The study explored EAP and ESP teachers' perceptions and experiences in using AI. It also focused on determining their roles and agency in using GenAI.

Attitudes, Familiarity, and Use of AI

One key result that emerged from the questionnaire was that teachers in universities generally have a positive attitude toward using AI in education. Our findings align with some previous studies (Derakhshan & Ghasvand, 2024; Dinçer & Bal, 2024), which also identified positive attitudes toward AI. Nevertheless, despite the similarity, Uzbekistani teachers' lack of awareness of any AI regulations may suggest the existence of a systematic gap, especially in local universities and remote regions of the country. Though some international universities in Uzbekistan have adopted AI policies (such as Westminster International University in Tashkent), local universities are in the process of catching up with their global counterparts. This gap, however, may be a general trend globally, as some researchers also argue that many HE institutions today are unprepared for the change through successful integration of AI into education (Barrett & Pack, 2023; Kadan et al., 2024). Consequently, the absence of institutional guidance may lead to uneven policies that result in unequal access to opportunities, as Ou et al. (2024) underlined.

Previous studies indicated that teachers tend to employ AI mainly for providing feedback (Derakhshan & Ghasvand, 2024; Dinçer & Bal, 2024; Fan et al., 2024; Topal, 2024) and for creating engaging activities. Nevertheless, Uzbekistani teachers reported prioritizing material design and plagiarism detection, but the use of AI for feedback came only as a fourth purpose among 10 major categories. This trend implies that, in developing contexts, the provision of instructional materials and concerns of academic integrity may outweigh the importance of quality feedback. Another possible explanation for the greater focus on designing teaching materials than assessment and feedback might be the teachers' greater readiness to experiment. It is widely recognized that designing teaching materials with GenAI is much quicker and time-saving. In contrast, inputting an accurate and detailed prompt to produce appropriate grading or feedback requires more time, skill, and effort, which teachers have yet to enhance.

Benefits and Shortcomings of Integrating AI

Our study participants indicated some of the major benefits of AI. According to them, AI is most beneficial as it helps teachers save time and work efficiently, generates quality materials to meet the learners' needs, and promotes creativity. These findings extend the work of Dinçer and Bal (2024) and Derakhshan and Ghasvand (2024), who found AI's benefits in tailoring materials, reducing teachers' workload, and facilitating assessments. There are evident reasons for these findings. On the one hand, the content generated by AI is tailored to the user's prompts, so when teachers mention the characteristics of their learners, including their needs and styles, they receive appropriate responses. On the other hand, because AI technologies, especially GenAI, produce an output based on the user's input in no time, this positively impacts the practicality principle of assessment, making the grading process smoother and faster.

Another significant result relates to the shortcomings of using AI technologies. The respondents saw students' and teachers' over-reliance on AI as the most critical concern, alongside academic dishonesty triggered by AI usage in education. These results accord with previous findings, highlighting the notion of over-reliance as a negative feature of AI usage (Dilzhan, 2024; Javier & Moorhouse, 2024). This perception may be supported by the users' motivations, which may decline when there are simpler

methods to complete tasks, whether for teachers or students. For students, becoming accustomed to overusing AI for assignments of any complexity level and purpose may lead to conscious and unconscious academic dishonesty. Meanwhile, teachers may rely on AI to develop lesson plans, classroom activities, and assessment specifications without putting in sufficient effort to tailor the output to their context and learners. These tendencies may explain the opinions expressed by the Uzbekistani teachers in the study.

Teachers' Roles and Agencies in the GenAI Era

The qualitative analysis yielded interesting insights into the interviewed teachers' roles and engagement with GenAI technologies. Zhai's (2024) framework provides an insightful lens for interpreting the opinions and experiences of teachers in implementing GenAI in their pedagogical activities.

One primary feature of the teachers' responses is their generally positive attitude toward GenAI's implementation, as they reflected on the challenges they faced. This result shows that teachers have actively used the tools and thus can comment on the difficulties they encountered. Zhai (2024) also describes GenAI adopters as actively engaged with AI tools. Similarly, our respondents shared personal experiences and noted specific features of GenAI technologies, clearly showing that they had achieved a certain degree of expertise.

Next, Zhai's descriptions of the users as GenAI collaborators at the integration stage aligns closely with our findings. Our respondents showed mature and critical evaluations of GenAI's capabilities and suggested sensible strategies to achieve the desired outcome. This can be explained by the fact that they have had ample experience and formed these strategies through trial and error. Most importantly, the teachers demonstrated a strong awareness of how to integrate GenAI into traditional instruction to maintain a balance and achieve learning outcomes for the benefit of learners. In fact, prior studies also highlighted the importance of reflecting on experience while experimenting with integrating AI into pedagogy (Chapelle, 2024; Topal, 2024).

However, the results show that the respondents have yet to transition to the innovation stage: they either displayed a lack of confidence or provided generic opinions on the future trends they wish to observe in GenAI. This feature indicates they are not ready to pioneer or lead initiatives in GenAI's integration into educational processes (Zhai, 2024). This finding may be attributed to the teachers' lack of advanced and specialized knowledge of GenAI, as they are still in the process of experimenting and learning. Indeed, Kadan et al. (2024) and Uddin et al. (2024) also indicated that training and infrastructural gaps are the primary barriers teachers need to overcome to advance toward higher levels of engagement with AI. However, for Uzbekistani teachers, it is not infrastructural gaps but their lack of confidence and expertise that hinders innovation, even though many international universities in the country provide adequate resources.

As expected, our study reveals that the interviewed teachers had progressed past the GenAI observer role and advanced to subsequent roles, including GenAI adopters and even GenAI collaborators. The teachers have not yet reached the GenAI innovator role in the final innovation stage.

Limitations and Further Studies

The current study has limitations associated with self-reporting and the representativeness of the number of participants. Firstly, considering that we employed a questionnaire and interviews as data collection tools, the responses may contain a self-reporting bias caused by the recall period and social desirability factors (Althubaiti, 2016). Therefore, future studies should focus on triangulating the

research instruments, including a tool that is less dependent on participants' self-reporting. Moreover, despite the high number of HE institutions across the country, the total number of respondents was insufficient to ensure a representative sample. This limitation reduces the generalizability of the findings and highlights the need for broader outreach in future studies. Finally, the study did not conduct an analytical comparison of the responses between EAP and ESP teachers. Future research could examine possible similarities and differences between these groups to reach a deeper understanding of how GenAI contributes to different ELT domains.

Conclusion and Implications

The study aimed to explore the perceptions of EAP and ESP teachers regarding the impact of AI on their teacher-related activities and practices, focusing on identifying their roles and engagement in adopting GenAI tools. The findings show that teachers are positive about using AI in teaching. However, they are unaware of any established AI-related policies in their HE institutions. Teachers from various regions of the country actively use AI for multiple purposes to enhance educational processes, recognizing the primary benefits of AI technologies in creating high-quality materials and saving teachers' time. Irrespective of the benefits, the teachers also highlighted the over-reliance of both students and teachers on AI technologies as a primary negative aspect. In response to the first research question, teachers generally perceive AI positively, recognizing its benefits for their activities while also noting some concerns. As for the second research question, teachers seem to have transitioned from the GenAI observer role to the subsequent roles of GenAI explorers and GenAI collaborators. They show a considerable degree of familiarity and expertise in GenAI technologies and their integration for multifaceted educational purposes. As for the implications of the findings, we, the educators, should change our understanding of AI technologies, moving from viewing them as just supporting tools for designing materials for classroom use to recognizing them as potential instruments for enhancing curricula and transforming educational practices. However, today's educators should first gain a solid understanding of AI's capabilities, which is possible through constant professional development. Therefore, it is essential to acknowledge the need to continuously upgrade knowledge and skills to contribute to pioneering ideas and practices in AI-supported education.

Use of GenAI

The researchers utilized AI-powered tools to optimize various stages and processes of the research, including compiling references on MyBib and generating a matrix of sources and themes for the literature review using ChatGPT and Poe. Grammarly was utilized for polishing the language and boosting the readability and style of the paper. No AI tools were used for generating research hypotheses or writing the conclusions. The final manuscript was authored and reviewed by the listed authors without additional AI input.

References

- Abdurayimov, J. (2024). *Uzbekistan becomes Central Asia's leader in the AI readiness index*. Center for Progressive Reforms. <https://proreforms.uz/publications/uzbekistan-becomes-central-asias-leader-in-the-ai-readiness-index-263>. Accessed June 1, 2025.
- Alharbi, K., & Khalil, L. (2023). Artificial intelligence (AI) in ESL vocabulary learning: An exploratory study on students and teachers' perspectives. *Migration Letters*, 20(S12), 1030–1045. <https://migrationletters.com/index.php/ml/article/view/8224>
- Althubaiti, A. (2016). Information bias in health research: Definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare*, 9(1), 211–217. <https://doi.org/10.2147/JMDH.S104807>

- Arowosegbe, A., Alqahtani, J. S., & Oyelade, T. (2024). Perception of generative AI use in UK higher education. *Frontiers in Education*, 9, 1–11. <https://doi.org/10.3389/feduc.2024.1463208>
- Barrett, A., & Pack, A. (2023). Not quite eye to A.I.: Student and teacher perspectives on the use of generative artificial intelligence in the writing process. *International Journal of Educational Technology in Higher Education*, 20(1), 1–24. <https://doi.org/10.1186/s41239-023-00427-0>
- Chan, C. K. Y. (2023). A comprehensive AI policy education framework for university teaching and learning. *International Journal of Educational Technology in Higher Education*, 20(1), 1–25. <https://doi.org/10.1186/s41239-023-00408-3>
- Chapelle, C. A. (2024). Open generative AI changes a lot, but not everything. *The Modern Language Journal*, 108(2), 534–540. <https://doi.org/10.1111/modl.12927>
- Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 61(2), 228–239. <https://doi.org/10.1080/14703297.2023.2190148>
- Derakhshan, A., & Ghiasvand, F. (2024). Is ChatGPT an evil or an angel for second language education and research? A phenomenographic study of research-active EFL teachers' perceptions. *International Journal of Applied Linguistics*, 34, 1246–1264. <https://doi.org/10.1111/ijal.12561>
- Dilzhan, B. (2024). *Teaching English and artificial intelligence: EFL teachers' perceptions and use of ChatGPT*. [Master thesis, SDU University]. <https://doi.org/10.35542/osf.io/fwy92>
- Dinçer, N., & Bal, S. (2024). A qualitative journey on instructors' perceptions of artificial intelligence in EFL education. In F. Pan (Ed.), *AI in language teaching, learning, and assessment* (pp. 78–100). IGI Global.
- Fan, Y., Tan, S., & Yuk, G. (2024). EAP teacher feedback in the age of AI: Supporting first-year students in EFL disciplinary writing. *Australian Journal of Applied Linguistics*, 7(3), 1943–1943. <https://doi.org/10.29140/ajal.v7n3.1943>
- Farrelly, T., & Baker, N. (2023). Generative artificial intelligence: Implications and considerations for higher education practice. *Education Sciences*, 13(11), 1109. <https://doi.org/10.3390/educsci13111109>
- Fife, S. T., & Gossner, J. D. (2024). Deductive qualitative analysis: Evaluating, expanding, and refining theory. *International Journal of Qualitative Methods*, 23(1), 1–12. <https://doi.org/10.1177/16094069241244856>
- Firat, M. (2023). What ChatGPT means for universities: Perceptions of scholars and students. *Journal of Applied Learning and Teaching*, 6(1), 57–63. <https://doi.org/10.37074/jalt.2023.6.1.22>
- Gibson, D., Kovanovic, V., Ifenthaler, D., Dexter, S., & Feng, S. (2023). Learning theories for artificial intelligence promoting learning processes. *British Journal of Educational Technology*, 54(5), 1125–1146. <https://doi.org/10.1111/bjet.13341>
- Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *British Dental Journal*, 204(6), 291–295. <https://doi.org/10.1038/bdj.2008.192>
- Hakimova, M., Kalonov, M., Hamidov, J., Khimmataliev, D. & Turabekov, F. (2024). The digital frontier: AI-enabled transformations in higher education management. *Indonesian Journal of Educational Research and Technology*, 4(1), 71–88. <https://ejournal.upi.edu/index.php/IJERT/article/view/60367/0>
- Handley, Z. (2024). Has artificial intelligence rendered language teaching obsolete? *The Modern Language Journal*, 108(2), 548–555. <https://doi.org/10.1111/modl.12929>
- Javier, D. R. C., & Moorhouse, B. L. (2023). Developing secondary school English language learners' productive and critical use of ChatGPT. *TESOL Journal*, 15(e755), 789–805. <https://doi.org/10.1002/tesj.755>
- Kadan, G., Emeç, H., & Yilmaz, I. (2024). Investigation of teachers' opinions on the inclusion of artificial intelligence in educational activities. *Isarpublisher.com*, 2(5), 37–45. <https://doi.org/10.5281/zenodo.11406930>

- Karataş, F., Eriçok, B., & Tanrikulu, L. (2024). Reshaping curriculum adaptation in the age of Artificial Intelligence: Mapping teachers' AI-driven curriculum adaptation patterns. *British Educational Research Journal*, 51(1), 1–27. <https://doi.org/10.1002/berj.4068>
- Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., & Stadler, M. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
- Kim, N. J., & Kim, M. K. (2022). Teacher's perceptions of using an artificial intelligence-based educational tool for scientific writing. *Frontiers in Education*, 7, 1–13. <https://doi.org/10.3389/educ.2022.755914>
- Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal*, 54(2), 537–550. <https://doi.org/10.1177/00336882231162868>
- Kohnke, L., & Zou, D. (2025). Artificial Intelligence Integration in TESOL teacher education: Promoting a critical lens guided by TPACK and SAMR. *TESOL Quarterly*. <https://doi.org/10.1002/tesq.3396>
- Kong, S.-C., Cheung, W. M. Y., & Tsang, O. (2024). Developing an artificial intelligence literacy framework: Evaluation of a literacy course for senior secondary students using a project-based learning approach. *Computers & Education: Artificial Intelligence*, 6, 100214–100214. <https://doi.org/10.1016/j.caeai.2024.100214>
- Lex.uz. (2024). *Resolution of the President of the Republic of Uzbekistan on the approval of the strategy for the development of artificial intelligence technologies until 2030*. Lex.uz. <https://lex.uz/en/docs/7159258#7159264>.
- Miao, F., & Shiohira, K. (2024). *AI competency framework for students*. United Nations Educational, Scientific and Cultural Organization. <https://doi.org/10.54675/JKJB9835>
- Nazaretsky, T., Ariely, M., Cukurova, M., & Alexandron, G. (2022). Teachers' trust in AI-powered educational technology and a professional development program to improve it. *British Journal of Educational Technology*, 53(4), 914–931. <https://doi.org/10.1111/bjet.13232>
- Neff, J., Arciaga, K., & Burri, M. (2024). EFL students' and teachers' perceptions of the ethical uses of AI tools. *Technology in Language Teaching & Learning*, 6(3), 1–19. <https://doi.org/10.29140/ttl.v6n3.1714>
- Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Shen, M. Q. (2021). Conceptualizing AI literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, 2(1), 1–11. <https://doi.org/10.1016/j.caeai.2021.100041>
- Ngo, T. N., & Hastie, D. (2025). Artificial intelligence for academic purposes (AIAP): Integrating AI literacy into an EAP module. *English for Specific Purposes*, 77, 20–38. <https://doi.org/10.1016/j.esp.2024.09.001>
- O'Dea, X., & O'Dea, M. (2023). Is artificial intelligence really the next big thing in learning and teaching in higher education? A conceptual paper. *Journal of University Teaching and Learning Practice*, 20(5), 5–17. <https://doi.org/10.53761/1.20.5.05>
- Ou, A. W., Stöhr, C., & Malmström, H. (2024). Academic communication with AI-powered language tools in higher education: From a post-humanist perspective. *System*, 121(103225), 1–14. <https://doi.org/10.1016/j.system.2024.103225>
- Pack, A., & Maloney, J. (2024). Using artificial intelligence in TESOL: Some ethical and pedagogical considerations. *TESOL Quarterly*, 58(2), 1007–1018. <https://doi.org/10.1002/tesq.3320>
- Pretorius, L. (2023). Fostering AI literacy: A teaching practice reflection. *Journal of Academic Language and Learning*, 17(1), 1–8. <https://journal.aall.org.au/index.php/jall/article/view/891>
- Shakib Kotamjani, S., Shirinova, S., & Fahimirad, M. (2023). Lecturers' perceptions of using artificial intelligence in tertiary education in Uzbekistan. *Proceedings of the 7th International*

- Conference on Future Networks and Distributed Systems* (pp. 570–578). <https://doi.org/10.1145/3644713.3644797>
- Sitheequ, M. (2024). Exploring ethical dimensions of AI-enhanced language education: A literature perspective. *Technology in Language Teaching & Learning*, 6(3), 89–99. <https://doi.org/10.29140/tltl.v6n3.1813>
- Southworth, J., Migliaccio, K., Glover, J., Glover, J., Reed, D., McCarty, C., Brendemuhl, J., & Thomas, A. (2023). Developing a model for AI across the curriculum: Transforming the higher education landscape via innovation in AI literacy. *Computers and Education: Artificial Intelligence*, 4(1), 100127. <https://doi.org/10.1016/j.caeai.2023.100127>
- Sullivan, M., Kelly, A., & McLaughlan, P. (2023). ChatGPT in higher education: Considerations for academic integrity and student learning. *Journal of Applied Learning & Teaching*, 6(1). <https://doi.org/10.37074/jalt.2023.6.1.17>
- Thorne, S. L. (2024). Generative artificial intelligence, co-evolution, and language education. *The Modern Language Journal*, 108(2), 567–572. <https://doi.org/10.1111/modl.12932>
- Topal, İ. H. (2024). ChatGPT: A critical evaluation. *TESOL Journal*, 15(e810), 1–4. <https://doi.org/10.1002/tesj.810>
- Uddin, M. S., Islam, M. N., Haque, I., Hilaly, M. R., Hosain, F., & Hasan, M. M. (2024). University EFL Teachers' perceptions about the effectiveness of AI-enhanced e-assessments in Bangladesh: A phenomenological study. *Bulletin of Advanced English Studies*, 9(2), 71–82. <https://doi.org/10.31559/baes2024.9.2.4>
- Ugli, A.M.B., Kamal, S.S.L.A.; Azamovna, A.M. (2025). Understanding Uzbekistan university EFL teachers' perceptions of ChatGPT: From benefits to ethical challenges. *International Journal of Information and Education Technology*, 15(2), 246–254. <https://doi.org/10.18178/ijiet.2025.15.2.2238>
- Walter, Y. (2024). Embracing the future of artificial intelligence in the classroom: The relevance of AI literacy, prompt engineering, and critical thinking in modern education. *International Journal of Educational Technology in Higher Education*, 21(1), 1–29. <https://doi.org/10.1186/s41239-024-00448-3>
- Waltzer, T., Cox, R. L., & Heyman, G. D. (2023). Testing the ability of teachers and students to differentiate between essays generated by ChatGPT and high school students. *Human Behavior and Emerging Technologies*, 2023, 1–9. <https://doi.org/10.1155/2023/1923981>
- Yeo, M. A. (2023). Academic integrity in the age of artificial intelligence (AI) authoring apps. *TESOL Journal*, 14(3), 1–12. <https://doi.org/10.1002/tesj.716>
- Yusuf, A., Pervin, N., & Román-González, M. (2024). Generative AI and the future of higher education: A threat to academic integrity or reformation? Evidence from multicultural perspectives. *International Journal of Educational Technology in Higher Education*, 21(1), 1–29. <https://doi.org/10.1186/s41239-024-00453-6>
- Zhai, X. (2024). Transforming teachers' roles and agencies in the era of generative AI: Perceptions, acceptance, knowledge, and practices. *Journal of Science Education and Technology* (2024). <https://doi.org/10.1007/s10956-024-10174-0>