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Opinions of Uzbek Teachers on the Use of AI in Education at International Universities. A Case Study of Westminster International University in Tashkent

Dilbar Kasimova
Westminster International University in Tashkent, Uzbekistan
dkasimova@wiut.uz

Abstract

The integration of artificial intelligence into the education system is happening everywhere, and it has both positive and negative aspects. This article examines how teachers at international universities in Uzbekistan perceive artificial intelligence and how they envision the benefits and drawbacks of introducing AI into their universities and education in general. This study analyses the responses of teachers from Westminster International University in Tashkent, who are involved in undergraduate and postgraduate teaching in Business, Economics, IT, and English subjects. Respondents voluntarily participated in a questionnaire combining quantitative and qualitative items. Researchers from many countries investigate teachers' perceptions of AI use in their practice and the activities of their educational institutions. Such works, including this paper, help in developing institutional policies for the effective implementation of AI. The study revealed that although teachers acknowledge the benefits and opportunities of AI, such as saving time, content creation, and research assistance, concerns such as academic dishonesty, ethical issues, and data privacy affect lecturers' behaviour.

Keywords: artificial intelligence, education system, teacher perceptions, institutional policies.

Streszczenie

Opinie uzbeckich nauczycieli na temat wykorzystania sztucznej inteligencji w edukacji: na przykładzie Westminster International University w Taszkencie

Integracja sztucznej inteligencji z systemem edukacji zachodzi na całym świecie i niesie za sobą zarówno pozytywne, jak i negatywne konsekwencje. Niniejszy artykuł analizuje postrzeganie sztucznej inteligencji przez wykładowców międzynarodowych uczelni w Uzbekistanie oraz ich opinie na temat korzyści i wyzwań związanych z jej wprowadzaniem do edukacji. Badanie przeprowadzono wśród nauczycieli akademickich Westminster International University w

Taszkencie, prowadzących zajęcia na poziomie licencjackim i magisterskim z zakresu biznesu, ekonomii, informatyki oraz języka angielskiego. Respondenci dobrowolnie uczestniczyli w ankiecie łączącej elementy ilościowe i jakościowe. Badania dotyczące postrzegania wykorzystania AI w edukacji przez nauczycieli są prowadzone w wielu krajach, a analizy tego typu – w tym niniejszy artykuł – wspierają opracowywanie skutecznych polityk instytucjonalnych dotyczących wdrażania sztucznej inteligencji. Wyniki badania wskazują, że choć nauczyciele dostrzegają liczne korzyści płynące z wykorzystania AI, takie jak oszczędność czasu, tworzenie treści czy wsparcie w działalności badawczej, to obawy związane z nieuczciwością akademicką, kwestiami etycznymi i ochroną prywatności danych nadal wpływają na ich podejście do tej technologii.

Słowa kluczowe: sztuczna inteligencja, system edukacji, opinie nauczycieli, polityka instytucjonalna.

1. Introduction

In the modern world, the introduction of artificial intelligence (AI) has impacted not only the economic and industrial sectors but has also begun to penetrate all spheres of human activity. Naturally, the education sector has become involved in this process as well. Some teachers are independently studying AI tools and implementing them in their practice. Simultaneously, there are educational institutions whose administrations are actively exploring effective strategies for integrating artificial intelligence into the educational process.

It was necessary to examine the current state of this issue in Uzbekistan. That is why this study had two objectives. The first included studying how teachers at international universities in Uzbekistan, using Westminster International University in Tashkent (WIUT) as an example, perceive and use artificial intelligence in their educational practice. The second was to use the received responses to contribute to the development of institutional policies regulating the effective and ethical use of AI.

2. Literature review

With the increasing adoption of IT innovations in the field of education, scholars around the world have begun to study artificial intelligence, both its positive and negative aspects. For example, a study by Holmes et al. (2019: 82) examined the implementation of AI in the education system. The authors explored how artificial intelligence is transforming education, focusing on what students should learn in an AI-driven world and how AI technologies improve the process of teaching and

learning. It is suggested that AI should be used to support rather than replace teachers, as genuine learning depends on human qualities such as empathy, ethics, and judgment, while teachers' capacity can be enhanced by being freed from routine tasks, allowing greater focus on creative and interpersonal aspects of education (Holmes et al. 2019: 622). Furthermore, ethical concerns such as bias, transparency, and fairness are also discussed, and it is emphasised that the future use of AI in education must be guided by clear ethical frameworks and policies to ensure that technological progress serves human learning rather than replacing it (Holmes et al. 2019: 178). However, this study also highlights that technological advances alone are not enough. Effective use of AI depends on lecturers' ability to combine technology with pedagogical and subject-matter knowledge—the principles underlying the TPACK framework (Koehler & Mishra 2009).

Malaysian researchers found that there is unequal access to resources and insufficient training for teachers, so they proposed professional development programs for teaching AI literacy and institutional support (Afandi et al. 2024: 204). Using a quantitative survey study with 72 selected school teachers, Turkish authors found ambivalent attitudes among them (Uygun 2024: 934). On the one hand, there was optimism about the positive impact of AI on learning. The authors noted that teachers' optimistic attitudes were based on their beliefs that AI has a positive impact on individual learning and productivity, as it saves time, monitors the learning process, and helps achieve effective learning, making it more enjoyable and efficient. On the other hand, teachers expressed caution about the AI implementation into the educational process, which could lead to a loss of emotional connection between teacher and student. Authors also remarked on teachers' concerns about data security and the potential for student passivity while using AI (Uygun 2024: 935).

Researchers such as Alwakdani (2024: 2743) studied Saudi Arabian teachers' perceptions of integrating AI into their teaching practices. The author, based on a sample of 1101 teachers, found that 63.2% of participants believed that AI-based educational tools could reduce the time they spent on routine tasks. Furthermore, the results revealed that 61.7% believed such tools had the potential to develop more engaging and interactive teaching methods. Although most participants were positive about integrating AI into their practice, they also expressed caution regarding the impact on teacher-student interactions and the impact on creativity and critical thinking. Teachers highlighted the limited ability of AI to demonstrate emotional awareness, empathy, and pedagogical sensitivity, which teachers have (Alwakdani 2024: 2752).

Recent studies underscore that university teachers are generally positive about the introduction of AI into the educational process. According to Simona Bezjak (2024: 402), Slovenian university teachers perceive artificial intelligence in education as a means of optimising educational processes, especially in administrative tasks, creating teaching materials, and providing student support. Similarly, Mulaudzi and Hamilton (2025) in their qualitative study among university faculty identified that AI assists teachers by generating diverse ideas, providing timely feedback, and tailoring learning to students' needs. Chan and Hu (2023) also demonstrated that interactive AI tools promote active participation, immediate feedback, content creation and automation of routine tasks. Together, these findings suggest that teachers' experiences with AI have been mainly positive, and lecturers use AI to improve their content, pedagogical and technological skills.

The integration of AI in education affects not only teachers but also students, so it is reasonable that researchers also study the opinions of students. A group of academics from Bukidnon State University (Philippines) conducted a quantitative and qualitative analysis among 100 undergraduate students. Students reported that the most commonly used AI tools were ChatGPT, Quillbot, Perplexity, Gemini, and Grammarly (Abejo et al. 2024: 133). They also expressed positive views on the implementation of AI in the curriculum, as students acknowledged that AI personalises learning and facilitates access to information. At the same time, students were uncertain about the future capabilities of AI in education, as they reported concerns about the accuracy of the results generated by AI and the possible reduction in interaction between teachers and students. Another authors (Chan & Hu 2023) investigated opinion of 399 undergraduate and postgraduate students from various disciplines in Hong Kong, highlighted the following benefits of AI development in the educational process: personalised and immediate learning support, writing and brainstorming support, research and analysis support, visual and audio-multimedia support, and administrative support.

Some education-related organisations are also exploring the implementation of AI in teaching practices and the development of necessary policies and measures for this. For instance, UNESCO (2021: 31) released a report that enables policymakers to compare the potential of AI in education and proposed strategies to harness its benefits while mitigating associated risks. The report highlighted several negative impacts that may arise from the implementation of AI in education: ethical risks, privacy and data security risks, quality and accountability risks. Hence, the authors recommended developing a regulatory framework and inclusive policies to guarantee equal access

to AI tools and resources for all segments of the population. They also suggested investing in training programs for both teachers and students on the effective use of AI. Another publication prepared by the European Education and Culture Executive Agency (2023: 60) contains an analysis of the integration of artificial intelligence in the educational environment across Europe. It aims to guide policymakers, lecturers and stakeholders in maximising the benefits of AI and addressing its risks.

A report by the U.S. Department of Education (2023: 16) guides the integration of AI in education, with the authors emphasising the need to adhere to fair, ethical and human-centred approaches. Another recent report was prepared by the European Schoolnet Academy (Cukurova 2024: 6), which supports educational innovation and professional development for teachers across Europe. This document examined the professional development programs required for teachers in light of the growing impact of artificial intelligence on education systems. According to the report, they should include the building of foundational competencies, including general digital skills to effectively integrate technology, ethical skills, and human-centred skills to ensure responsible and inclusive use of AI.

3. Methodology

3.1. Theoretical perspective

The Technological Pedagogical Content Knowledge (TPACK) model developed by Koehler and Mishra (2005) served as the theoretical framework for this study. Teachers need to understand and develop their skills so that all three types of knowledge (content, technology, and pedagogical knowledge) interact effectively and contribute to successful classroom problem-solving. Sometimes, a teacher may have a deep understanding of a subject but struggle to translate this knowledge into effective teaching methods. Conversely, there are times when a teacher explains a concept well but is unable to effectively use technology, which reduces their effectiveness and prevents them from realising their teaching potential. As Gomez-Trigeros (2023) emphasised, teachers' digital competence and ethical knowledge are also integral to the TPACK concept, as these aspects determine how educators use technology responsibly and creatively. Therefore, the use of AI in education can help teachers improve their teaching strategies and content development. The

TPACK model served as the basis for both the development of a questionnaire reflecting the relationship between content, pedagogy, and technology and for interpreting the results.

In Uzbekistan, the TPACK framework can be applied as a core theoretical model while implementing AI in higher education. For instance, authors Kendjaeva et al. (IMRAS 2025: 54) examined the AI usage and explored Uzbekistan's institutional readiness for the implementation of it in education. Authors proposed a roadmap through 2030. General improvements to the higher education system were planned, such as modernisation of infrastructure (Internet, campus technologies), mandatory courses on artificial intelligence literacy for students and faculty, and the creation of a two-tier ethical governance system at the university.

A related study by Kotamjani et al. (2024) described the use of AI in the higher education system of Uzbekistan using the example of teachers from Central Asian University. The authors conducted a qualitative study interviewing 15 teachers working at this university. As a result of one-on-one semi-structured interviews, researchers explained that teachers view AI as a promising tool for improving teaching and learning. At the same time, respondents highlighted the need for better institutional support, training, and close attention to ethical issues when introducing AI into education.

Although numerous studies have explored the integration of artificial intelligence in education, few specifically focus on Uzbekistan's higher education system. Existing research papers typically examine specific aspects, such as the education system's readiness to implement AI (IMRAS 2025). Kotamjani et al. (2024) attempted to observe the application of AI using the example of an international university. However, a clear gap remains in understanding how both faculty and the university itself integrate AI into their work, the challenges they face, and what institutional policies should be applied to enhance the AI implementation.

To fill this gap, this study uses Westminster International University in Tashkent as a case study, where faculty members are analysing how AI is being integrated into teaching and learning. The study's findings aim to expand our understanding of AI implementation at international universities and will serve as a basis for future comparative studies with other educational institutions in Uzbekistan. Thus, to address the research gap, three research questions were posed:

1) Which AI tools do teachers at international universities in Uzbekistan use in their teaching activities and why?

2) What advantages and disadvantages do teachers associate with using AI tools?

3) What policies do teachers believe are necessary to support the effective and ethical use of AI in education?

3.2. Data and methods

To address the research questions, a quantitative approach was employed. This method allows for the identification of general trends and the gathering of more answers. It was chosen to study teachers' perceptions of the challenges and benefits associated with integrating artificial intelligence into their practice and the university curriculum. The study used the TPACK framework (Koehler and Mishra 2006). This framework provides an opportunity to explore how teachers combine their technological, pedagogical, and content knowledge when using AI in their teaching.

This study uses a method similar to earlier studies of faculty experiences with AI in teaching and learning. For example, Alwakdani (2024), Uygun (2024), and Bezyak (2024) collected survey data and included qualitative reflections to understand how faculty perceive and apply AI. Ghimir et al. (2024b) examined university faculty perceptions of generative AI. The research questions were partially adapted from the work of authors such as Alwakdani (2024), Isik et al. (2024), and Afandi et al. (2024). Taken together, these studies demonstrate that survey-based research, sometimes supported by qualitative data, remains a robust and established approach to analysing faculty views on AI.

The questionnaire was designed and administered through Google Forms. It was primarily quantitative, consisting of 18 questions, but also included three open-ended items to collect qualitative data. In addition, 15 questions used a “Select all that apply” (SATA) format, each offering between five and eleven responses. This multiple-choice design was deliberately selected to reflect the complex use of AI in education (OECD 2021). In line with established survey design principles (Fowler 2014), this format was expected to enhance validity by more accurately representing the diverse views of teachers. Furthermore, 14 SATA questions included an “Other (please specify)” option that allowed participants to provide their own responses. Many teachers also took advantage of this opportunity and added their responses to the existing ones. This qualitative data complemented the quantitative results.

Quantitative data were analysed using Microsoft Excel. Descriptive statistics (frequency, percentage, and mean score analysis) summarised responses. Qualitative comments and open-ended answers were thematically coded to identify frequent themes and trends.

Initially, the questionnaire was piloted by a teacher experienced in artificial intelligence research, who provided feedback on its clarity and relevance. The survey was then reviewed and approved by two specialists to ensure the questions were appropriate, valid, and aligned with the study's objectives. Ethical considerations were carefully considered at all stages of the study. Before participating, teachers were informed about the study's purpose and provided their voluntary consent. The anonymity and confidentiality of all responses were guaranteed, and no personally identifiable information was collected. The researchers also ensured that the questions did not contain any misleading wording or bias.

The questionnaire was sent to all 115 full-time faculty members at WIUT between March 3 and April 5, 2025. Ultimately, approximately 63% of the responses were considered suitable for analysis, resulting in a sample of 72 teachers. Eligibility was determined based on the completeness, relevance, and consistency of responses. Specifically, questionnaires with incomplete responses or inconsistent data were excluded to enhance the validity and reliability of the data. The participants represented various faculties — Business (30%), Economics (25%), English (25%), and Business Information Systems (BIS) (20%) — and included lecturers teaching at the undergraduate and postgraduate levels.

All questions were divided into three categories, each answering one of the research questions. The first category focused on which AI tools are used by teachers at international universities in Uzbekistan and why. Respondents were asked how often they use AI, and whether they use it at all. Then, they were asked which AI tools they use and prefer.

Next, to address the second research question, the survey included a series of questions focusing on the perceived advantages and disadvantages of using AI tools. Specifically, respondents were asked about the benefits, challenges, and obstacles associated with the use of AI in education.

The final section of the questionnaire investigated the policy measures required to support the effective and ethical use of AI. The goal was to identify concerns or issues that prevent the adoption of AI in education at both the whole sector and international university levels. We also learned how teachers are implementing AI in teaching, and what is needed to ensure more effective integration into the curriculum. Finally, teachers were asked what improvements or changes they suggest for integrating AI at the international university level.

4. Findings and discussion

The survey data was analysed using descriptive statistics in Excel to identify general trends in AI use among faculty and university. To demonstrate these trends, the findings chapter presents the main results.

4.1. Research question #1: Which AI tools do teachers at international universities in Uzbekistan use in their teaching activities and why?

4.1.1. Frequency of AI use

To begin analysing the responses to the research questions, it was necessary to determine how frequently faculty use AI in their teaching. The results, presented in Figure 1, indicate that only 8% of respondents have never used AI in their teaching. Most faculty use AI tools with some regularity—about one-third often and another third using it periodically.

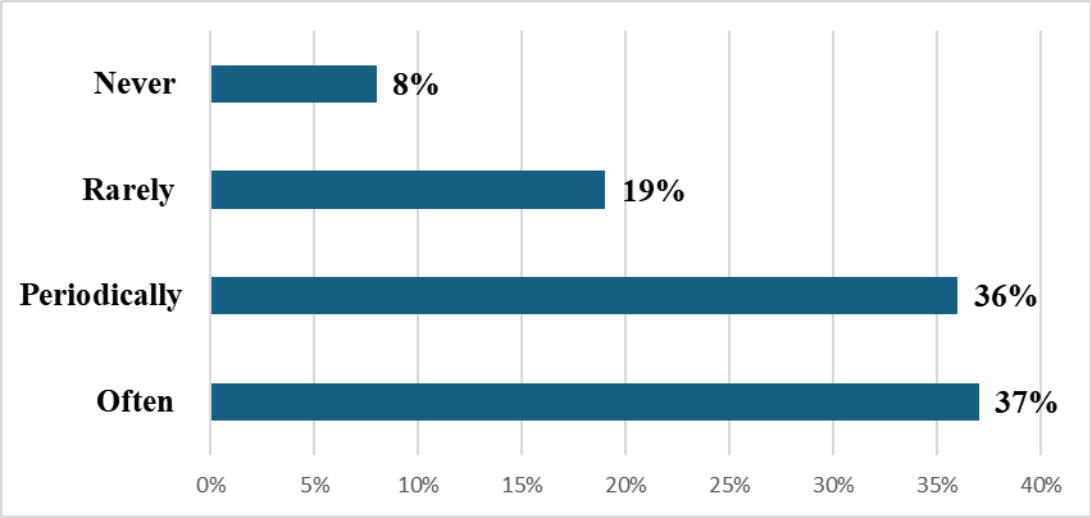

Figure 1. AI Usage in Teaching (%)

Only a few lecturers who chose the "Often" option in their comments indicated that they use AI tools in every lesson. This and other respondents' answers suggest that integrating AI into teaching is not yet common at WIUT. The main reasons why not all WIUT teachers use AI in their teaching are that not all of them are proficient in using AI programs, and they do not trust these programs. At the same time, lesson plans are not designed to mandate the use of AI. Alwakdani (2024) also

noted that teachers do not use AI in their teaching due to a lack of awareness of its use and concerns about its reliability and accuracy.

4.1.2. Most frequently used AI tools

The next question directed respondents to identify the AI tools they use in their teaching practices. The survey permitted multiple selections, allowing participants to also specify their preferred AI applications. Findings in Table 1 illustrate a variety of applications, but it was expectable that ChatGPT would come out on top by a wide margin from other tools, with almost 90% of all respondents using this application. ChatGPT prominence is confirmed by reports and research papers. According to the UNESCO (2021) report, ChatGPT has rapidly gained popularity due to its advanced capabilities, such as fast data processing, accessibility, and versatility, making it a preferred tool for educational purposes worldwide. Furthermore, Holmes et al. (2019), Chan and Hu (2023), and Abejo et al. (2024), and Wahas and Al-Radhi (2025) highlighted ChatGPT as the most popular AI resource.

Grammarly and Poe (Quora AI chat) became the second common AI tools with almost identical figures, roughly one-third of respondents. Besides, in the third place were applications such as DeepSeek and Microsoft Copilot. In addition, a minority of respondents use tools like Perplexity.ai, Claude AI, Google Bard, and image generation tools (e.g., Midjourney, DALL-E), as well as specialised educational AI platforms (e.g., MagicSchool.ai).

Table 1. Most frequently used AI tools (%)

AI Tool	**Respondents**
ChatGPT	89%
Grammarly	33%
Poe (Quora AI chat)	32%
DeepSeek	21%
M. Copilot	18%

Overall, the data show a diverse set of tools used by teachers. The questionnaire initially included 11 AI applications, and when respondents answered, they added 22 more tools that they use in teaching practice. This suggests that teachers at WIUT are experimenting with a range of

applications, although each is used by only a small proportion of respondents. This dominance is also consistent with the global trend previously described by Dwivedi et al. (2023), who characterise the launch of ChatGPT as a turning point that democratised access to generative AI and facilitated its rapid adoption in various fields, including education. Wahas and Al-Radhi (2025) also found that teachers and students view ChatGPT as a promising learning tool, but its use remains experimental due to concerns such as accuracy, ethical issues, and limited teacher training. Wang et al. (2024) explored empirical studies and found that in higher education, teachers' experimenting with AI through adaptive learning platforms, personalised tutoring, and assessment tools. Similarly, Filiz et al. (2025) demonstrated that many teachers are independently designing and implementing small experimental activities using AI tools such as ChatGPT and MagicSchool. Taken together, these studies highlight the early, grassroots stage of AI adoption in education, driven by teachers' voluntary experimentation.

4.2. Research question # 2: What advantages and disadvantages do teachers associate with using AI tools?

4.2.1. Perceived advantages and concerns of AI in education

Since the successful and ethical implementation of AI in education depends on understanding teachers' attitudes toward this topic, many scholars have examined teachers' perceptions of the opportunities and challenges associated with AI integration (Chan & Hu 2023; Uygun 2024; Alwakdani 2024; Mulaudzi & Hamilton 2025). Therefore, the second research question in this study aimed to explore the key benefits and challenges that teachers associate with the use of AI tools in their practice.

As shown in Table 2, the majority of respondents identified the potential of AI to save time for both teachers and students (63 respondents). The same point was also mentioned by Uygun (2024) and Alwakdani (2024), who acknowledged that the automation of routine tasks improves the effectiveness of teaching. Many faculties also reported that AI facilitates content creation and enhances research capabilities (44 respondents each), confirming the findings of Mulaudzi and Hamilton (2025), they described that AI facilitates innovation in university curriculum. Benefits such as continuous improvement of instructional materials (34 respondents), improved access to educational resources (28), and support for diverse learning styles (24) align with Isik et al. (2024)

results. The improvement of digital literacy, student engagement, and the effectiveness of assessment and feedback processes was also highlighted by WIUT teachers. Overall, the results indicate that faculty perceive AI primarily as a time-saving and capacity-building tool that improves teaching effectiveness, consistent with trends observed in many studies.

Table 2. Advantages and concerns regarding of AI in education

Advantages	**# of respondents**	**Concerns**	**# of respondents**
Time-saving for teachers and students	63	Student overreliance on AI	52
Enhanced research capabilities	44	Academic dishonesty (plagiarism, cheating, fabrication)	48
Content creation assistance	44	General ethical considerations	39
Continuous improvement of teaching materials	34	Misinformation from AI	38
Improved access to resources	28	Lack of AI skills (digital literacy)	31
Support for diverse learning styles	24	Data privacy and security	27
Improved digital literacy of teachers	21	Loss of human interaction	24
Enhanced student engagement	16	Teacher dependence on AI	23
Efficient grading and feedback	10	Inequity in access to technology	7
No advantages	0	Job displacement for teachers	4

At the same time, respondents noted important challenges associated with the implementation of AI in education. For example, WIUT teachers mentioned that students might heavily rely on AI (52 respondents), while there is also a risk that the teachers themselves may become overly dependent on it (23 respondents). Furthermore, concerns about academic dishonesty were raised (48 respondents), as students could easily cheat, use other people's work, or forge answers. This finding aligns with Abd-Elaal et al. (2019) and Alwakdani (2024), who also explained that AI can facilitate cheating, for example, by forging answers or submitting AI-generated work. In addition to these concerns, a significant number of participants (39) highlighted ethical issues, which is consistent with the ideas and considerations raised by other scholars and organisations (European Commission 2022; Donatus et al. 2024; Mulaudzi & Hamilton 2025). Finally, lecturers emphasised the value of teacher-student interaction in the learning process, pointing to the risk of a potential loss of human interaction (24 respondents). It is notable, however, that respondents were least concerned about AI replacing teachers (only 4 respondents).

Given these various challenges and opportunities, striking a balance between the use of artificial intelligence in higher education should be considered an institutional task. Holmes et al. (2019) stated the need to develop clear policies at the institutional level to ensure professional training and equal access to artificial intelligence tools.

4.2.2. Respondents' rating of AI's impact on their teaching

Teachers provided ratings on the impact of AI on their teaching. The results in Table 3 indicate that a clear majority (73%) fall into the moderate or minimal impact range. This means that most lecturers are either in the early stages of learning about AI or gradually integrating AI. Merely about 19% overall describe the impact of AI as significant or completely transformative in their teaching practice. Additionally, just 5% of respondents reported no impact on their teaching.

Table 3. Respondents' rating of AI's impact on their teaching (%)

Category	**%**
Moderate: I use it regularly, and it has changed some aspects of my teaching.	46
Minimal: I occasionally use it but do not see significant benefits.	27
Significant: It has transformed my teaching methods and student engagement.	12
Transformative: AI has completely transformed my teaching approach and the learning experience for my students.	7
No Impact: AI has had no noticeable impact on my teaching practices.	5
Other (please specify)	3
Total	100

Two respondents provided individual responses reflecting their personal opinions, differing from those provided. One noted, "I see potential, but I don't use it for ethical reasons," demonstrating hesitation stemming from questions of moral and academic integrity. Another wrote, "I am considering changing the assessment to make it more AI-resistant," indicating proactive efforts to adapt teaching methods and ensure fairness in the grading system.

These findings are consistent with those of Ghimire, Prather, and Edwards (2024b) and Afandi et al. (2024), who reported that teachers' attitudes toward AI are significantly influenced by their previous technological experience and institutional support. From a TPACK perspective, the level

of AI adoption in teaching practice depends on teachers' ability to combine their technological knowledge with pedagogical knowledge and subject matter knowledge. This suggests that professional training in information literacy and AI use can help teachers strengthen the links between TPACK and facilitate the use of AI in the classroom.

4.3. Research question # 3: What policies do teachers believe are necessary to support the effective and ethical use of AI in education?

4.3.1. Rating of AI implementation at the university

In addition to ranking the impact of AI on their teaching activities, respondents had to assess how well AI is being implemented in teaching at WIUT. This rating allowed us to understand how the organisation is doing in adopting AI from the staff's perspective (see Figure 2).

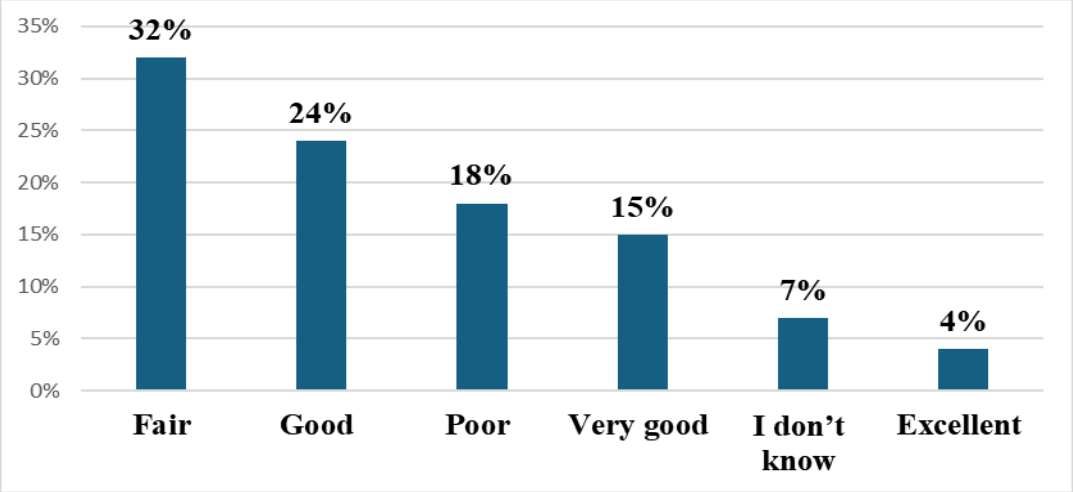

Figure 2. Rating of AI implementation at the university (%)

The results revealed even 43% of respondents rated the AI positively (Good, Very Good, and a few Excellent), the majority (50% combining Fair and Poor) see the implementation as average. A small number did not have enough information to rate the university (7%), which could indicate that AI initiatives may not be well communicated or widely visible within institutions. Cukurova et al. (2024) emphasise the important role of transparent and ongoing communication by universities to raise awareness of AI initiatives, foster faculty engagement, and align institutional goals with educational practices. It means the necessity for better institutional communication about AI

strategies and successes. Opinions varied significantly: some praised the university's efforts to implement AI, while others were less satisfied. These differences are likely due to differences between departments, variations in AI integration, and individual experience with this technology. Among those participating in this survey, for example, were teachers from the BIS department, who have extensive experience using AI, and who felt the university would need to be much more technologically advanced to meet their requirements. There were also lecturers from the Faculty of Economics, who are generally known at WIUT as advocates of more traditional teaching. For them, even small initiatives from the administration will be very inspiring. Therefore, understanding these mixed opinions is crucial, as faculty support directly impacts the effectiveness of AI implementation in the educational environment.

4.3.2. Barriers and challenges in international universities preventing AI adoption

Teachers were asked to describe the barriers and challenges that international universities face in adopting AI (see Figure 3). Several major obstacles emerged, reflecting common global issues in higher education. The most popular barrier chosen by 64% of respondents became ethical concerns. These issues make many institutions hesitant to move forward, as they fear crossing ethical boundaries that are central to academic life (Holmes et al. 2019; Donatus et al. 2024). Globally, many teachers may feel unprepared to use AI, which was demonstrated by another barrier: the "Lack of training for lecturers" – 63%. "Resistance to change" is a very thought-provoking result that highlights the human factor (51%) highlighted by Cukurova et al. (2024).

Other difficulties mentioned by faculty included the challenge of connecting new AI tools with existing university systems (29%), a shortage of funding, and worries about keeping institutional and student data secure (both 25%). Taken together, these findings suggest that a mix of ethical doubts, limited preparedness, and organisational constraints continues to hold back the wider use of AI in higher education.

Respondents identified some challenges associated with integrating AI into university systems, such as learning management systems (LMS) or internal IT programs. For example, if AI tools do not integrate smoothly with a university's LMS or intranet due to technical incompatibility, data privacy restrictions, or a lack of user training, staff will face difficulties in using them consistently. As a result, adoption becomes slow, fragmented, and relies on individual teacher initiative rather than institutional strategy. 25% of respondents also mentioned data privacy as a major barrier.

Concerns about protecting student data and ensuring the security of any data used by AI systems make universities reluctant to integrate AI tools.

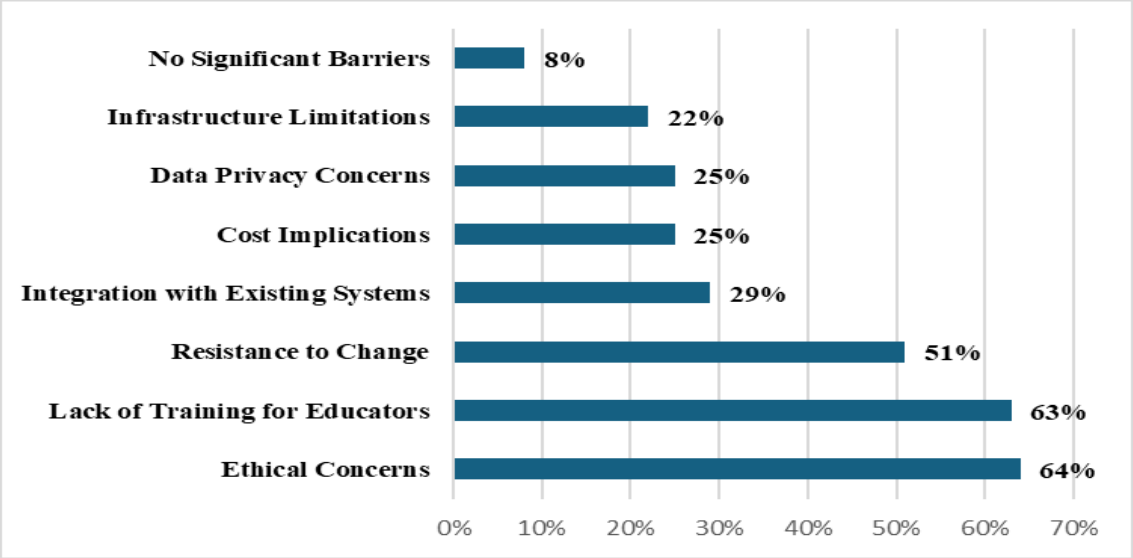

Figure 3. Barriers in international universities preventing AI adoption (%)

Furthermore, it was noted that universities face challenges such as limited infrastructure (22%), which requires strategic planning and investment from university leadership. Zawacki-Richter et al. (2019) also emphasised that the successful implementation of AI in higher education depends on the availability of adequate technological infrastructure and institutional support, which is achieved through careful resource allocation. Besides, some faculty, when answering this question, acknowledged that there were no major obstacles (8%). Overall, mitigating infrastructural and technical barriers will depend on thoughtful strategic leadership and investments that will ensure the effective integration of AI at international universities.

4.3.3. Suggestions for effective integration of AI into the international university curriculum

One of the key questions inquired of respondents was to gather suggestions on how AI could be better integrated into the university curriculum. The majority of teachers (54 respondents, 74 %) recommended employing faculty development programs focused on AI usage, including courses and workshops. Similar recommendations appear in the literature (Isik et al. 2024; Wang et al. 2024; Mulaudzi & Hamilton 2025). The second most common suggestion offered by 41 respondents (57%) was to integrate the use of AI into the university teaching methodologies, aligning with

proposals by Cukurova et al. (2024). The importance of ethical considerations and the responsible use of AI by both students and faculty (e.g., fairness, data privacy, and preventing bias) was highlighted by 39 respondents (54%). Participants suggested that universities develop clear policies to regulate the ethical use of AI, a viewpoint supported by Alwakdani (2024: 2753) and Okwara (2024: 5).

Lecturers also suggested setting up pilot programs to test the AI implementation, which could help identify best practices for scaling up across all courses in the future. In addition, university-government collaboration was chosen by over a quarter of respondents (26%), implying that government-funded initiatives and projects to introduce AI into education could facilitate its effective integration across international universities

Overall, it can be concluded that while faculty at international universities in Uzbekistan, particularly at WIUT, recognise the benefits of AI for enhancing teaching effectiveness and creativity, its implementation is still limited and largely experimental. Viewed through the TPACK framework, these results indicate that successful AI implementation depends on teachers' ability to combine technological competence with robust pedagogy and subject matter knowledge, supported by institutional training.

5. Conclusion

A study investigating teachers' opinions on AI has shown that academics are somewhat cautious about the technology. On the one hand, they acknowledge the benefits and opportunities of AI, such as saving time, helping to create creative and educational content, improving research, and providing various opportunities for the professional development of teachers. ChatGPT was chosen by most respondents as the most common AI tool. Similar results were found in Abejo (2024: 133), where students selected ChatGPT as the first choice because it helped them generate ideas, rephrase certain texts, and improve grammar. In our study, this tool gained the most popularity among teachers due to its ease of use, offering a broad set of capabilities (generate ideas for lesson plan, create interactive activities, provide immediate feedback), and the fact that even its free version provides reliable and accurate answers to teacher's subject-related questions.

The research also found that many teachers are experimenting with AI tools on their own, such as DeepSeek, MagicSchool.ai, Edpuzzle, and Quizlet. Furthermore, some faculty members are

voluntarily introducing AI tools to their students, demonstrating community initiative to integrate AI literacy into the curriculum. Despite these positive aspects, the introduction of AI into the educational environment of international universities can be characterised as an initial stage of the AI implementation process at universities. Some authors argue that faculty members are the first to explore, experiment, and implement AI tools, followed by institutionalisation and systematisation at the organisational level (Ghimire et al. 2024a; Filiz et al. 2025; Kotamjani al. 2025; Mulaudzi & Hamilton 2025). From a TPACK perspective, this early stage reflects the development of faculty technological knowledge and its gradual integration with pedagogical and subject knowledge, which together form the basis for sustainable AI implementation.

On the other hand, serious concerns have been raised about the integration of AI into the educational process, which naturally tempers the initial optimism surrounding its implementation. Academic integrity issues such as plagiarism, cheating, and the unattributed use of AI-generated materials, as well as questions of ethical use and data privacy, are becoming increasingly pressing, impacting faculty attitudes and teaching behaviour. In their study, Abd-Elaal et al. (2019: 5) argue that these issues require a dual approach: technological and human. They proposed investing in AI-based detection systems (such as plagiarism and authorship checkers) to help teachers identify unoriginal or machine-generated content, while maintaining fair assessment. At the same time, they emphasise that human supervision is still essential, as automated systems alone cannot assess the contextual or ethical aspects of student work.

Moreover, the lack of institutional support, including insufficient faculty training, limited integration of AI into curricula, and insufficient funding for licensed AI platforms, continues to hinder the systematic implementation of AI in international universities (UNESCO 2021; European Commission 2023).

Most respondents, when assessing the current state of AI implementation at WIUT, rated it as insufficient, often rating it as satisfactory or poor, and emphasised the lack of formal institutional policies for integrating AI into education. Many studies highlighted that the lack of clear institutional policies regarding AI integration creates uncertainty among faculty, creates problems with standardising these processes, and significantly hinders the effective implementation of AI technologies in the learning environment (Holmes et al. 2019; Zawacki-Richter et al. 2019; UNESCO 2021; European Commission 2022). An analysis of respondents' proposals for integrating AI into the university curriculum can serve as a basis for developing institutional

policies on the effective and ethical use of AI at international universities in Uzbekistan. To develop strong and evidence-based policies, further research at other international universities and comparative analysis are needed to identify trends and support the wider adoption of AI at international universities.

It has been established that WIUT and other international universities should take a balanced and proactive approach to integrating AI into their curricula, as uncoordinated or excessive implementation can lead to ethical, pedagogical, and data security concerns (Holmes et al. 2019; UNESCO 2021). A proactive strategy ensures that AI tools enhance teaching and learning rather than replace essential human interaction or academic learning (Zawacki-Richter et al. 2019).

This approach should include the organisation of comprehensive digital literacy training programs for faculty and students (Gomez-Trigueros 2023), structured around the TPACK theory, and an examination of the advantages and disadvantages of artificial intelligence. Clear policies on the ethical issues of AI use, including academic integrity, data protection, and transparency, should also be developed for each faculty and student (European Commission 2023). The European Education and Culture Executive Agency (2023) also emphasises that universities must balance innovation and responsibility when integrating AI into educational and management activities. Furthermore, university management is encouraged to integrate AI with their IT departments to maintain data security and protect institutional information stored on university servers (U.S. Department of Education 2023).

AI integration should employ rigorous assessment methods to deter academic dishonesty. Specifically, institutions should deploy systems that verify originality and detect AI-generated content (Holmes et al. 2019; UNESCO 2021), and implement adaptive learning systems that track student progress and flag anomalies in submitted exam materials (Zawacki-Richter et al. 2019; Dwivedi et al. 2023). These measures ensure that AI functions both as a performance resource and as a mechanism for personalised learning, while safeguarding academic integrity and enabling prompt faculty intervention when misconduct is suspected.

Another important issue raised by respondents is the need to maintain human interaction throughout the learning process, so that AI complements rather than replaces the role of teachers, as humans can demonstrate emotions, empathy, and motivation (Holmes et al. 2019). Therefore, institutional policies at international universities must explicitly define rules and ethical standards regarding permissible AI tool usage by both students and faculty. Such policies are essential to

guarantee transparency, equitable assessment, and compliance with academic integrity principles in the digital era (European Commission 2023).

Other equally important suggestions put forward by respondents include improving university infrastructure and providing open access to AI resources so that faculty and students can benefit from them, develop innovative thinking, and actively engage in the learning process. The former entails not only upgrading technological equipment, such as purchasing new computers and providing high-speed internet connections, but also creating digital labs and innovation centers where students and faculty can experiment with AI tools in real-world learning environments (Zawacki-Richter et al., 2019). This includes installing software such as ChatGPT, Google Bard (Gemini), MagicSchool.ai, DeepSeek, Canva AI, Edpuzzle, Quizlet, or Turnitin Draft Coach—applications that support the creation of text and multimedia content and help assess academic integrity (Dwivedi et al., 2023).

Providing open access to AI resources should also include institutional subscriptions to paid educational platforms (e.g., Coursera AI for Education, LinkedIn Learning AI Skills Pathways) and free access to open online learning courses (e.g., Coursera "AI for Everyone," "UNESCO Handbook on AI and Education," or "Elements of AI" from the University of Helsinki) to improve the digital competence of faculty and students. These initiatives promote basic AI literacy, increase ethical awareness, and empower lecturers to more effectively integrate AI tools into their teaching practices (UNESCO 2021). By providing these resources, international universities will foster an inclusive educational environment where everyone can participate and contribute.

At the same time teachers highlighted the necessity of including two other recommendations into institutional policies. The first is cooperation with the government, represented by the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan, and the second is the launching of pilot projects on the use of AI. Cooperation with a government organisation can help strengthen the implementation of AI in the educational practices of an international university. Through joint projects, international universities can gain access to funding, expertise, and resources. In turn, pilot projects on the use of AI can serve as experimental platforms for collecting data and examining the experience of using AI in education. In addition, successful projects will demonstrate the benefits of implementing AI to all stakeholders within the education system.

In response to the third research question, respondents offered several ideas and suggestions for the effective and ethical use of AI in education. Based on these findings and the opinions of

WIUT faculty, several practical steps were formulated to support universities to integrate AI more systematically and ethically.

- Universities should establish centres to train teachers in AI and technology integration, applying the principles of the TPACK framework.
- Develop and implement clear institutional policies that define how to use AI, including ethical standards for both faculty and students.
- At the same time, support is required at the infrastructure level to integrate AI into university IT systems and applications while ensuring enhanced data security.
- Establish cooperation with the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan to launch pilot projects integrating AI into university curricula, and provide financial and administrative support for these initiatives.
- Develop systems to gather and assess feedback from faculty and students on AI integration in teaching and learning for process monitoring.

Taken together, the obtained results provided comprehensive answers to all three research questions, shedding light on the current use of AI tools by teachers, their benefits and challenges, as well as policy directions needed to promote the responsible and effective integration of AI into higher education.

In summary, artificial intelligence must transform from a new and often unregulated technology into a practical and reliable educational tool used by both teachers and students. Despite the scepticism of some teachers regarding AI's future role, its successful implementation will depend on the concerted efforts of the academic community, guided by comprehensive institutional policies, to ensure that artificial intelligence continues to serve the core mission of education in the next decade.

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