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Article

AI in Iranian higher education: A mixed-methods study of ethical tensions and L2 learning challenges

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Abstract: This mixed-methods study examines how artificial intelligence (AI) technologies are reshaping English as a Foreign Language (EFL) learning and teaching within Iranian higher education. Drawing on survey data from 46 students and semi-structured interviews with six EFL instructors and six students, the study explores (1) the extent of students' AI use, (2) their motivations for using AI, (3) instructors' attitudes toward AI integration, and (4) perceived risks related to ethics, equity, privacy, and academic integrity. Descriptive findings indicate that more than 85% of students regularly use AI tools (most commonly ChatGPT, Bard, Quillbot, and Grammarly) for idea generation, language refinement, task structuring, and grade maximisation. Interview data demonstrated a clear "assisted learning" orientation among students but also highlighted ethically problematic practices involving plagiarism, overreliance, and strategic paraphrasing to avoid detection. Instructors expressed marked scepticism, with the majority viewing AI as a catalyst for academic dishonesty and a threat to creativity, deep learning, and assessment validity. Despite recognising AI's potential benefits, both students and instructors voiced substantive concerns regarding data privacy, job displacement, inequity, and algorithmic bias. Collectively, the findings reveal a complex landscape in which AI is simultaneously valued, distrusted, and inadequately regulated. The study concludes by outlining implications for ethical governance, AI literacy integration, and the development of context-sensitive EFL pedagogies in Iranian universities.

Keywords: academic integrity; AI literacy; artificial intelligence; ethics; EFL teaching and learning; equity; higher education; mixed-methods research

1. Introduction

The rapid expansion of artificial intelligence (AI) technologies has generated profound transformations across global educational systems, reshaping how learners access information, produce knowledge, and engage with academic tasks [1–3]. In higher education, AI-enabled platforms, ranging from generative language models to automated writing assistants, are increasingly embedded in students' everyday academic routines [4]. While international debates tend to focus on innovation, enhancement, and pedagogical optimisation, concerns are simultaneously intensifying regarding academic integrity, equity, data privacy, and the changing nature of teacher–student relations [5]. These tensions are particularly visible in foreign-language education, where AI directly affects linguistic output, rhetorical structure, and cognitive processes central to writing, comprehension, and communication [6,7].

In Iran, AI adoption in higher education is occurring rapidly but unevenly. As in many countries with widening digital divides, AI use is shaped by disparities in internet access, infrastructural capacity, socioeconomic status, and institutional policy constraints [8]. These inequalities, identified globally by Cabitza et al. [9] and Choi et al. [10], take on sharper contours in the Iranian context, where access to advanced technologies is mediated by regional differences, financial limitations, and limited institutional readiness. At the same time, Iranian universities have witnessed an accelerated use of AI writing tools among students seeking linguistic support, time-saving strategies, or academic competitiveness. This rising dependence raises important questions about authorship, creativity, ethics, and the future of L2-learning in academic environments already pressured by high-stakes assessment cultures.

Parallel to students' growing engagement with AI, instructors are navigating uncertainties around pedagogical legitimacy, assessment reliability, and shifting power dynamics in the classroom. Research suggests that teachers globally express scepticism about AI's capacity to provide personalised feedback, emotional attunement, or reliable evaluative judgment [11–13]. Instructors in Iran confront these same concerns, but often with fewer institutional resources, limited training, and heightened pressures to safeguard academic integrity. As AI becomes deeply entangled with both sanctioned and unsanctioned learning practices, questions emerge regarding how students understand the risks of privacy, surveillance, data ownership, and algorithmic bias—risks documented in recent analyses of AI systems.

Despite the urgency of these issues, empirical research addressing AI use in Iranian higher education remains scarce. Existing studies often highlight technological potential rather than examining social, ethical, or behavioural consequences, and few investigate the perspectives of both students and instructors within L2 learning environments. The present study seeks to address this gap by offering a mixed-methods exploration of AI use, motivations, risks, and attitudes within Iranian universities, with a particular emphasis on English as a Foreign Language (EFL) learning and teaching.

Accordingly, this study addresses four research questions:

- RQ1: To what extent do Iranian university students use AI technologies for academic purposes?
- RQ2: What motivations underlie students' reliance on AI tools in EFL learning?
- RQ3: What attitudes do English-language instructors hold regarding AI integration in teaching, assessment, and academic practice?
- RQ4: To what extent are students aware of the ethical, personal, and societal risks associated with AI technologies?

By examining these questions, the study seeks to illuminate the complex and sometimes contradictory ways in which AI is reshaping academic culture in Iran. The findings offer evidence-based insights for policymakers, instructors, and curriculum designers seeking to respond responsibly to the rapid emergence of AI in higher education.

2. Theoretical background

The integration of artificial intelligence into higher education has generated considerable debate about its pedagogical value, ethical implications, and broader social consequences [1, 2]. Within the domain of English as a Foreign Language (EFL) education, conversation is especially complex, as AI technologies intervene directly in language production, cognitive effort, authenticity of learning, and academic identity [14]. This section synthesises the major strands of research relevant to this study, with a particular focus on global trends and their relevance to the Iranian context.

2.1. AI in language education: Potentials and promises

Research on AI-enhanced language learning frequently highlights its capacity to support personalised instruction, scaffold task performance, and offer automated feedback at scale [1,3]. Intelligent tutoring systems and AI-driven platforms can model linguistic patterns, simulate conversational exchanges, and generate explanations tailored to learners' needs. Studies from higher vocational and EFL contexts report improvements in lexical accuracy, structural organisation, and writing fluency when AI is used as a supplementary learning tool [7, 15]. In theory, these affordances make AI an attractive addition to resource-limited educational systems, such as those in parts of Iran, where large class sizes and limited instructor availability complicate personalised instruction.

However, despite these documented benefits, scholars increasingly argue that AI's pedagogical value depends heavily on how it is contextualised within classroom ecosystems. Holmes and Tuomi [16], for instance, warn that AI may reproduce surface-level learning by prioritising correctness over critical thinking. Similarly, Liang et al. [17] and Risdianto et al. [18] emphasise that AI-driven language tools may streamline learning tasks but cannot replicate the reflective engagement or socio-cultural nuance required for deep linguistic competence. Thus, while AI can enhance efficiency, it risks narrowing the cognitive and communicative processes fundamental to authentic language learning.

2.2. Academic integrity, plagiarism, and student behaviour

One of the most contentious issues surrounding generative AI is its relationship to academic integrity. Eke [11] and Sweeny [19] underline the rising concern that students increasingly outsource cognitive labour to AI systems, blurring distinctions between "support" and "substitution." Choi et al. [10] found similar tensions in professional education, where AI-generated content contributed to both productivity and ethical ambiguity. In EFL contexts, where writing proficiency is often linked to linguistic struggle, AI's ability to paraphrase, rephrase, and compose complete essays amplifies the temptation to bypass learning processes.

Dakakni and Safa [20] demonstrate that students are already shifting reading practices, relying on digital shortcuts such as scanning tools and "Ctrl + F" to bypass deeper engagement. Integrating these findings into the AI landscape suggests a compounding effect: generative AI not only accelerates superficial reading but

may also encourage formulaic learning and decreased cognitive investment. These dynamics have become visible across global higher education and appear particularly acute in Iranian universities, where competitive pressures and high-stakes assessments incentivize efficiency over originality.

2.3. Psychological, cognitive, and pedagogical concerns

Beyond integrity, AI raises substantive concerns about its psychological and pedagogical impact. The literature emphasises the risk of diminished creativity, reduced problem-solving engagement, and erosion of students' motivation to wrestle with challenging tasks [15]. Research on digital immersion suggests that excessive reliance on automated tools can contribute to alienation, decreased human interaction, and overdependence on mechanised forms of guidance [4, 11, 15, 21]. Wogu et al. [22] argue that AI-driven learning systems may create environments where students "interact" more with machines than with teachers or peers, fundamentally altering the social experience of education.

These findings resonate strongly in contexts such as Iran, where educational culture traditionally values interpersonal mentorship, dialogic learning, and teacher authority. The potential displacement of human-based instruction thus raises cultural and relational concerns beyond academic performance alone.

2.4. Algorithmic power and information control

Popenici and Kerr [23] argue that AI systems embody the values, biases, and priorities of those who design and control them. This concentration of informational power among a small number of global technology firms invites scrutiny regarding transparency, surveillance, and the manipulation of user experience. Bostrom's [24] discussion of systemic fragility and global risk further illustrates how algorithmic decisions can shape educational environments in ways that remain opaque to students and educators.

In Iranian higher education, where national infrastructures often rely on foreign-developed platforms, concerns about dependency, data governance, and epistemic autonomy are particularly salient. The risk is not only pedagogical; it is also geopolitical.

2.5. Human interaction and social well-being

While AI offers efficiency and personalised feedback, its growing presence in the classroom may also reshape the social fabric of learning [3, 5]. Education is not merely the transfer of information; it is fundamentally relational. The presence of a teacher (someone who listens, interprets, encourages, and empathises) remains central to the development of learners' confidence and sense of belonging [25]. The increasing reliance on automated tutors and chatbots risks reducing meaningful interpersonal interaction, replacing human nuance with patterned, emotionally neutral responses.

Research on youth isolation highlights how digital immersion can weaken social bonds, increase loneliness, and diminish opportunities for genuine connection [16, 19, 21, 26]. Similar dynamics may unfold in AI-mediated

classrooms: students may choose to interact with machines rather than peers or instructors because machines offer instant answers without judgment. Yet this convenience can come at the cost of reduced collaboration, limited dialogue, and a diminished sense of community.

In the Iranian context, where collectivist cultural elements traditionally place value on group learning, teacher presence, and social engagement, the reduction of human contact may have broader psychological implications. If AI tools become the primary learning partners, students may feel less motivated to participate in group discussions or seek mentorship, potentially undermining well-being, identity formation, and the social cohesion that educational spaces are meant to foster.

2.6. Privacy and data security

AI systems rely on extensive data collection to function effectively, ranging from behavioural patterns and browsing histories to biometric inputs such as voice, typing rhythm, or facial features. The University of Buckingham Interim Report notes that much of this data is collected automatically, often without users fully realising the scope or future implications of such extraction. This raises a series of complex ethical questions: Who owns the data? How long is it stored? Who can access it? And under what conditions might it be shared?

For students, especially those unfamiliar with digital rights, the risks are heightened. Many may unwittingly provide sensitive academic or personal information to AI-powered tools that lack robust security protocols. Leisa Viktorivna et al. [27] warn that these systems can be targets for cyber-attacks or unauthorised access, making students vulnerable to data breaches, identity theft, or surveillance.

Within Iran, where online filtering systems, external platform restrictions, and varying digital regulations interact in complex ways, concerns around data privacy become even more salient. Students who rely on international AI platforms may inadvertently expose personal data to servers located outside national jurisdiction. Meanwhile, local institutions may not yet have comprehensive privacy frameworks adapted to AI-intensive environments. As AI continues to integrate more deeply into academic life, safeguarding students' digital identities becomes an urgent institutional responsibility rather than a technical afterthought.

2.7. Equity, bias, and the digital divide

One of the most persistent concerns regarding AI in education is the reproduction and sometimes amplification of existing social inequalities [1–3]. Algorithmic bias often arises unintentionally, shaped by the datasets and assumptions embedded within AI models. If these datasets overrepresent certain linguistic or cultural groups, the algorithm may generate more accurate outcomes for those populations while marginalising others. For example, an AI writing assistant trained primarily on Western academic conventions may judge or "correct" non-Western discourse styles more harshly, thereby reinforcing cultural hierarchies.

Equity issues also extend to access. As highlighted by Park et al. [25], the digital divide includes disparities in device availability, internet speed, digital literacy, and

familiarity with AI tools. Students from affluent urban areas may benefit from faster learning and higher-quality AI support, while those in rural or under-resourced regions may fall further behind.

In Iran, where economic inequalities and infrastructural differences are prominent across provinces, these disparities are especially visible. Reliable internet access varies dramatically, and not all students have access to laptops, updated devices, or paid AI platforms. Consequently, the integration of AI into education may unintentionally widen existing academic gaps rather than narrow them [28]. Without targeted policies, AI risks becoming an accelerant of inequality instead of an enabler of inclusive learning.

2.8. Labour, automation, and future employment

A significant strand of literature concerns the economic and occupational implications of AI. Georjieff and Hyee [15] caution that automation may disproportionately affect workers in fields such as education, journalism, engineering, and translation. Cabitza et al. [9] warn against assuming that AI is a neutral "assistant," instead arguing for a move away from anthropomorphised understandings of machine agency. Acemoglu and Restrepo [5] similarly contend that AI may widen socioeconomic cleavages by benefiting technologically skilled elites while undermining lower-skilled labour markets.

Within the Iranian context, where graduate unemployment already poses challenges, students' awareness of job displacement becomes an important psychological and sociological factor influencing their attitudes toward AI.

3. Materials and methods

This study employed a convergent mixed-methods design to investigate students' and instructors' engagement with artificial intelligence in Iranian higher education. Both quantitative and qualitative data were collected concurrently, analysed separately, and integrated during interpretation. This approach allowed for an in-depth examination of AI use patterns, underlying motivations, perceived risks, and pedagogical concerns within English as a Foreign Language (EFL) learning environments. The mixed-methods design enabled methodological triangulation, allowing quantitative patterns to be interpreted through qualitative explanations and interview-derived insights.

3.1. Participants

Participants included 46 undergraduate and postgraduate students enrolled in English-language courses at Iranian universities and six EFL instructors with a minimum of five years of teaching experience. Students represented a range of academic majors, socioeconomic backgrounds, and proficiency levels. Most student participants (approximately three-quarters) were recipients of scholarships or financial aid, while a smaller proportion were self-funded. Instructor participants varied in age, institutional affiliation, and familiarity with AI, offering diverse insights into pedagogical and ethical considerations surrounding AI use.

Participants were selected using a convenience sampling strategy, which is

common and appropriate in exploratory educational research where the target population is not easily accessible. Students were invited to participate through university mailing lists, departmental channels, and online academic groups, while instructors were recruited through direct departmental outreach. No randomization was used because the aim of the study was interpretive and descriptive rather than causal, and because access to the broader university population was logistically constrained. Convenience sampling was therefore appropriate for capturing naturally occurring attitudes among active EFL learners and instructors within the Iranian higher education context.

3.2. Instruments

3.2.1. Online survey

A structured online survey was administered to students to capture patterns of AI use, tool preferences, motivations, attitudes, and perceived risks. The survey consisted of both multiple-choice items (e.g., "Which AI tools do you use most frequently?") and Likert-scale questions (e.g., "How beneficial do you find AI for your academic work?"). Items addressing ethical issues, such as privacy, job displacement, algorithmic bias, and academic integrity, were included to assess students' awareness of potential harms.

3.2.2. Semi-structured interviews

Semi-structured interviews were conducted with six students and six instructors to complement survey findings and provide deeper insight into AI-related behaviours and perceptions. Interviews explored topics such as: a) motivations for using or avoiding AI, b) concerns about privacy, equity, and data security, c) instructors' views of AI's role in assessment, feedback, and academic integrity, and d) perceived societal consequences of widespread AI adoption. Interviews were conducted in English or Persian, depending on participant preference, audio-recorded with consent, and transcribed verbatim for analysis.

3.3. Data collection procedures

Data for this study were collected remotely over six weeks using both digital survey distribution and synchronous online interviews. This approach was selected to ensure accessibility for participants across different regions of Iran and to accommodate varying schedules, internet availability, and institutional constraints. The online survey was administered through a secure digital platform and disseminated via university mailing lists, student WhatsApp and Telegram groups, and official academic portals used by participating faculties. The distribution method allowed for a broad reach while maintaining voluntary participation. Before accessing the survey, students were presented with an informed consent statement outlining the aims of the study, the voluntary nature of participation, and their right to withdraw at any stage without justification. Respondents could skip any question they felt uncomfortable answering.

Interview data were collected following the completion of initial survey responses to ensure that the qualitative phase could elaborate on emerging patterns. After students and instructors expressed interest in participating in interviews, individual

appointments were scheduled at times convenient for participants. All interviews were conducted remotely via platforms such as Zoom or Skype, depending on participant preference and internet stability. Each interview lasted between 20 and 40 min. A semi-structured interview guide was used to ensure comparability across interviews while enabling participants to introduce additional insights or concerns. Follow-up probing questions were used to clarify meanings, explore contradictions, and capture nuanced experiences.

Ethical standards were upheld throughout the data collection process. No identifying information (such as names, student IDs, institutional affiliations, or IP addresses) was collected in the survey. Interview recordings were stored on a password-protected device, and transcripts were anonymised immediately after transcription by replacing all personal identifiers with pseudonyms. Participants were informed that their direct quotations might be used in the study but would remain anonymous. All digital data, including audio files, transcripts, and survey outputs, were stored securely and were accessible only to the researchers involved in the study. These procedures ensured participant confidentiality, protected personal data, and adhered to institutional guidelines for ethical conduct in research involving human participants.

3.4. Data analysis

3.4.1. Quantitative analysis

Survey data were analysed descriptively to compute frequencies and percentages related to AI usage, tool preferences, perceived benefits, and ethical concerns. These descriptive statistics were organised into thematic tables that helped trace emerging behavioural patterns among students.

3.4.2. Qualitative analysis

Interview data were analysed using thematic coding. Following recommendations from Isaee [1], transcripts were read multiple times, initial codes were generated, and themes were iteratively refined. The analysis focused on identifying recurring perceptions, contradictions, and tensions regarding AI use in learning and teaching. Coding emphasised semantic meaning (participants' explicit statements) and latent meaning (underlying assumptions, fears, or motivations).

3.4.3. Integration of data

Quantitative and qualitative findings were compared and merged during interpretation. Convergences, such as students' reported motivations and corresponding interview quotes, strengthened reliability, while divergences illuminated nuanced contradictions (e.g., students valuing AI yet distrusting its social consequences). This integrative process provided a holistic understanding of AI's role in Iranian higher education.

4. Results

This section presents the findings of the study in accordance with the four research questions. To maintain clarity, the qualitative and quantitative results are presented in the sequence in which they were collected and analysed. The first two tables summarise

the qualitative interview findings of instructors and students, while the last two tables present the descriptive statistics from the student survey. Together, these datasets provide a comprehensive picture of AI use, motivations, ethical risks, and pedagogical tensions in Iranian higher education.

4.1. Overview of instructors' perspectives

Perceptions of EFL instructors

The interviews with six English-language instructors revealed varied but predominantly cautious attitudes toward AI. **Table 1** provides a summary of their views across five main domains.

Table 1. Instructors' attitudes toward AI (N = 6).

Theme	AI tailored to students' needs	Students' use of AI	AI in the L2 classroom	AI for evaluating student work	AI and teacher training
Key Views	• Four of the six instructors argued that AI cannot truly personalise learning because it lacks emotional sensitivity and produces generalised, non-specific feedback. • Two believed that, with careful adjustment, AI could support students' individual needs.	• Four instructors believed AI is largely exploited for plagiarism or shortcuts. • Two argued that AI's presence is inevitable, and that curriculum and assessment policies must be redesigned accordingly.	• One instructor felt AI may spark creativity but harm language development by fostering laziness. • Two urged cautious use because AI discourages originality. • One dismissed AI as ineffective. • Two maintained AI could be beneficial if learning objectives are restructured.	• Four instructors rejected AI-based evaluation due to the lack of specificity and contextual awareness. • Two supported hybrid use, AI plus instructor evaluation.	• One instructor saw no point in training because students use AI unethically. • Three supported training mainly for "monitoring" students. • Two said training would be valuable only if learning outcomes are redesigned.

As shown in the table, the majority of instructors (four out of six) believed that AI tools cannot offer personalised learning or meaningful emotional feedback. They described AI-generated responses as "too generic," "mechanical," and "unable to recognise individual student needs." Only two instructors argued that AI could potentially be tailored to learners if used carefully and with explicit guidance.

A similar pattern emerged regarding AI use by students. Four instructors strongly believed that students were likely to misuse AI for plagiarism, cheating, or avoiding deep learning. Only two instructors viewed AI as an inevitable part of academia and suggested that curricula should evolve accordingly. Even among those with a more accepting stance, concerns remained about "overreliance," "loss of originality," and the tendency of students to take shortcuts.

Instructor concerns extended into assessment practices. Four instructors rejected the idea of using AI to evaluate student work, arguing that AI lacks sensitivity to nuance, creativity, and rhetorical development. One instructor allowed that AI might provide supplementary evaluation but insisted that human judgment remain central. Similarly, when asked about teacher training in AI, three instructors felt that training was useful mainly for policing and preventing academic misconduct, not for pedagogical innovation.

4.2. Student AI use and experiences

The interviews with six students similarly revealed diverse motivations and concerns. Their responses are summarised in **Table 2**.

Table 2. Summary of student responses on AI use (N = 6).

Theme	Types of AI used	Purposes for using AI	AI & privacy	AI & equity	General attitudes toward AI
Key Views	All six interviewed students used ChatGPT. Two also used Quillbot.	• Five used AI as an assistant, mostly for brainstorming, organising assignments, or generating ideas. • Some admitted using AI to complete entire assignments by copying/paraphrasing. • Others "rigged" the system by paraphrasing AI responses to avoid detection. • One used AI to practice style imitation.	• Half of the students expressed privacy concerns, especially regarding data storage and tracking of preferences. • Three expressed no concern, prioritising academic results over long-term data risks.	• Three showed awareness of fairness and job displacement issues. • Two were indifferent. • One viewed AI as potentially "dangerous" due to emerging human-like emotional responses.	• Four believed AI was academically useful despite drawbacks. • Two felt AI undermines education and wastes family tuition money. • Students often stated that AI reduces deep thinking, research skills, and creativity.

All interviewed students reported using ChatGPT, and two also used Quillbot, highlighting a strong dependency on generative text tools. Five students described AI as an "assistant" that helps with brainstorming, structuring, or refining assignments. Several admitted to using AI in ethically questionable ways, such as copying full responses or paraphrasing machine-generated answers to avoid detection.

Half of the students expressed concerns about data privacy, especially the possibility that AI systems store or track their personal information. Others were less cautious, prioritising convenience or grades over long-term digital risks.

Regarding equity, three students were aware of potential job displacement or unequal access, while two expressed indifference. One student articulated a more existential fear, describing AI's emerging human-like qualities as "scary."

Attitudes toward AI were mixed: four students believed AI was academically useful, while two argued that it undermines genuine learning and wastes family tuition money. Many felt that AI reduces deep thinking, research skills, and creativity—reflecting a "love–hate" dynamic in their perceptions.

4.3. Descriptive findings from the online survey

To address the first research question (the extent of student reliance on AI technologies), students were asked directly whether they used AI tools in their academic work. The quantitative data reveal very high levels of adoption. **Table 3** summarises patterns of usage and tool preferences.

Table 3. Descriptive Statistics of Students' AI Use (N = 46).

Variable	Category	N	%
AI Use	Yes	39	84.8%
	No	7	15.2%
Most Used Tools	Bard/Quillbot	18	38.0%
	ChatGPT	12	25.6%
	Grammarly	10	21.3%
Funding Status	Scholarship/Aid	35	76.1%
	Self-funded	4	8.7%

In total, 84.8% of respondents (N = 39) reported using AI for academic purposes, while 15.2% (N = 7) reported no usage. Bard and Quillbot were the most popular tools (38.0%), followed by ChatGPT (25.6%) and Grammarly (21.3%). A smaller group (12.1%) used specialised or less common AI platforms.

Funding status appeared to influence attitudes and usage. Students receiving scholarships or financial aid (76.1%) tended to report more positive views of AI, potentially due to academic pressure or the need to maintain high performance. Only four students were fully self-funded, limiting statistical interpretation but suggesting a possible link between financial pressure and AI reliance.

Notably, only 8.5% of students reported using AI explicitly to improve grades, yet interview data suggest that this number may be higher in practice due to hesitancy in self-reporting sensitive behaviours.

To further clarify the distribution of AI tools used by students, **Figure 1** provides a visual breakdown of the relative popularity of the main applications reported in the survey. This figure complements the descriptive statistics by illustrating disparities between tools, particularly the dominance of Bard/Quillbot and ChatGPT over other applications. This bar chart displays the percentage of surveyed students who reported using each major AI tool for academic purposes. Bard/Quillbot emerged as the most frequently used (38%), followed by ChatGPT (25.6%) and Grammarly (21.3%). A smaller proportion (12.1%) indicated using other, less common AI tools. The figure illustrates clear clustering around a few dominant tools, suggesting that students rely primarily on generative and paraphrasing models rather than a diverse mix of AI applications.

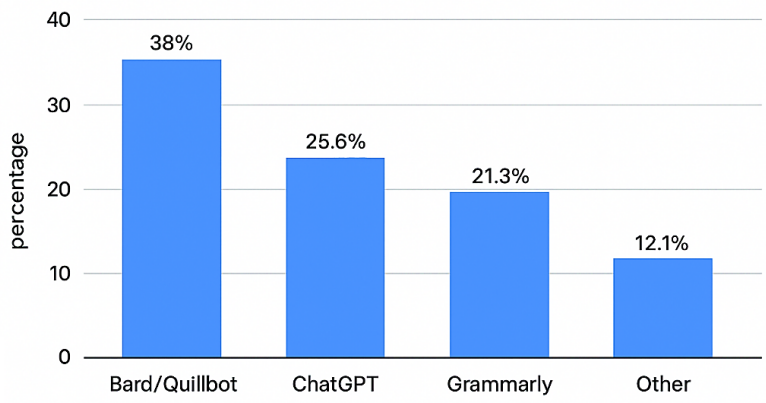

Figure 1. Distribution of AI tool usage among university students.

As shown in **Figure 1**, student engagement with AI is heavily concentrated around a small set of well-established platforms. The predominance of Bard/Quillbot indicates that paraphrasing and text-enhancement functions remain the most widely valued features among users. ChatGPT, while slightly less common, still accounts for more than a quarter of reported usage, reflecting its growing popularity for idea generation and drafting. Grammarly's lower, but still significant, usage rate suggests that students employ AI more for content generation than for micro-level editing. The minimal reliance on "other tools" indicates limited exploration of emerging or specialised AI applications, perhaps reflecting restricted digital literacy or insufficient institutional guidance. This distribution aligns closely with students' self-reported motivations for using AI, particularly their emphasis on improving writing structure and generating initial ideas.

4.4. Motivations behind AI use

The second research question explored why students turn to AI tools. **Table 4** summarises the main reasons.

Table 4. Descriptive statistics of AI motivations and attitudes (N = 46).

Category	Item	N	%
Motivations	Improve style/language	22	46.8%
	Idea generation	11	23.4%
	Maintain grades	4	8.5%
Attitudes	AI Beneficial	32	70.2%
	Distrust/Mixed	14	29.8%
Trust in Teaching	Prefer human teachers	46	100%
Hiring Fairness	Prefer human screening	39	85.1%
Job Displacement	Concerned	37	80.9%
Ethical Use	Would use more without penalties	41	89.4%

Nearly half of the respondents (46.8%) reported using AI to improve linguistic style, organisation, and clarity. A further 23.4% relied on AI for idea generation and brainstorming. While 8.5% reported using AI to maintain high grades, qualitative data suggest that grade-oriented use may be more widespread.

To provide a clearer visual representation of the underlying patterns in student behaviour, **Figure 2** summarises the main motivations reported for using AI tools. Although descriptive statistics illustrate these trends numerically, the figure helps demonstrate which motivations dominate students' engagement with AI and how secondary reasons compare in magnitude. This bar chart illustrates the proportion of students who reported each primary motivation for using AI in their academic work. Improving writing quality and stylistic clarity was the most frequently cited reason (46.8%), followed by idea generation (23.4%). A smaller proportion (8.5%) reported using AI mainly to maintain higher grades, while the remaining 21.3% indicated other miscellaneous reasons, such as obtaining structure or receiving general academic guidance. The figure shows a clear prioritisation of language enhancement over performance-driven or extrinsic motivations.

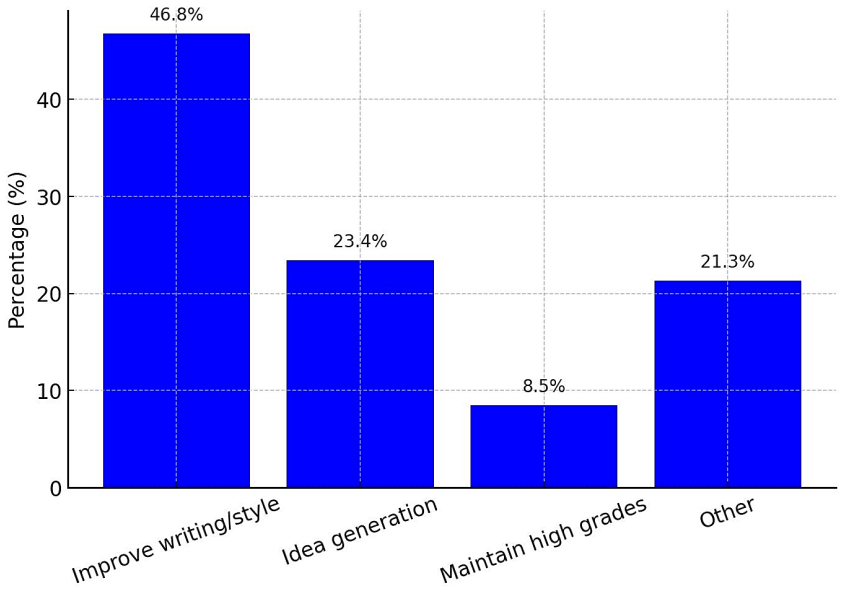

Figure 2. Student motivations for using AI tools.

As shown in **Figure 2**, the majority of students use AI not for shortcuts or grade-oriented purposes, but primarily for linguistic and stylistic support. This suggests that AI is most often used as a scaffolding tool that supplements academic writing rather than as a mechanism to bypass learning. The prominence of idea generation as the second most common motivation indicates that students view AI as an intellectual prompt rather than a replacement for their own thinking processes. The comparatively low percentage of students who use AI explicitly to maintain high grades reinforces the mixed-methods findings, which revealed that most participants perceive AI as a facilitator rather than a cheating device. The distribution also aligns with student interview narratives describing AI as a "blueprint," an "appetizer," or a stylistic model to imitate. Together, these patterns show that although students are heavily reliant on AI, much of this reliance is embedded in legitimate cognitive and academic processes, rather than narrow instrumental goals.

Students showed a strong preference for human instructors over AI bots, with 100% rejecting the idea of AI replacing teachers. Similarly, 85.1% preferred human-led hiring processes due to concerns about algorithmic bias or unfairness. High levels of concern about job displacement (80.9%) were also reported. Finally, 89.4% of respondents indicated they would increase their AI use if penalties or restrictions were removed, highlighting a gap between normative policy and actual student behaviour. These perspectives indicate that students view AI not merely as a digital tool but as an active cognitive partner in their learning process.

4.5. Awareness of ethical concerns and risks

The fourth research question explored the extent to which students were aware of the ethical, personal, and societal risks associated with AI use. Despite their substantial reliance on AI tools for academic tasks, students demonstrated a notable degree of scepticism about AI's broader implications, particularly in teaching, employment, privacy, and social fairness.

Survey findings revealed unanimous rejection of AI-based instruction: 100%

of respondents preferred human instructors over AI teacher-bots. Students consistently described human teaching as emotionally supportive, relational, and adaptable—dimensions they believed AI could not replicate. Likewise, 85.1% of students opposed AI-based hiring or screening systems, expressing concerns about algorithmic unfairness, potential bias, and the loss of human judgment in high-stakes assessments.

Concerns about automation and job displacement were also prominent. A substantial majority (80.9%) believed that AI poses a future threat to employment stability. However, students' views were far from uniform. During interviews, several participants expressed ambivalence or even optimism about the future of labour in an AI-driven society:

"I have no concerns. Someone needs to manage the machines." (SIV)
"Technology creates jobs in new ways." (SVI)
"I worry AI will replace humans, but it's still very helpful." (SI)

These contrasting views suggest a developing generational discourse in Iran in which students recognise the disruptive potential of AI while simultaneously embracing narratives of technological progress. Privacy concerns elicited similarly mixed responses. A segment of students appeared largely unconcerned or inattentive to privacy risks:

"I never think about privacy issues." (SIV)

Others expressed discomfort or anxiety, echoing findings from global AI ethics research:

"AI storing everything is scary. You feel exposed." (SV)

This divide suggests that, while Iranian students are aware of privacy risks, these concerns do not consistently influence their actual behaviour—mirroring the "privacy paradox" identified in broader digital ethics literature.

Perhaps the most striking outcome was students' willingness to increase their AI use if institutional restrictions were removed. Nearly 90% of respondents indicated that they would rely more heavily on AI if penalties, monitoring, or prohibitions were relaxed. This indicates a tension between ethical awareness and behavioural inclination: students recognise potential risks but continue to prioritise efficiency, academic performance, and convenience.

Taken together, these findings reveal a complex dependency-distrust dynamic. Students rely heavily on AI but remain uneasy about its fairness, intrusiveness, and long-term consequences. Their attitudes reflect both the promises and anxieties associated with AI in contemporary higher education.

4.6. Integration of qualitative and quantitative findings

The integration of findings across data sources reveals several consistent patterns. First, students demonstrate high levels of AI use but also significant mistrust of AI's accuracy, fairness, and privacy standards. Second, while students prioritise efficiency and convenience, instructors prioritise integrity and deep learning. This mismatch

reflects broader tensions in global research regarding AI's pedagogical role.

Additionally, both qualitative and quantitative findings suggest that AI may exacerbate existing inequalities, particularly for students lacking digital literacy or technological access. Finally, interview data confirmed that many students use AI as a cognitive shortcut, bypassing brainstorming and deep reading practices, echoing global concerns about the erosion of critical thinking.

Together, these results illustrate that AI is deeply embedded in student learning practices but not yet fully understood, regulated, or integrated into pedagogical frameworks in Iranian higher education.

4.7. Awareness of ethical concerns and risks

The fourth research question examined students' awareness of AI's potential risks. Despite heavy reliance on AI, students exhibited substantial distrust toward its broader implications. All participants (100%) rejected AI-based teaching, valuing the relational and emotional dimension of human instructors. Similarly, 85.1% opposed AI-based job screening, citing fears of bias and unfairness. Concerns about job displacement were also widespread (80.9%), although several students expressed ambivalence or optimism:

"I have no concerns. Someone needs to manage the machines." (SIV)
"Technology creates jobs in new ways." (SVI)
"I worry AI will replace humans, but it's still very helpful." (SI)

When asked about privacy, students were divided: Some were unconcerned:

"I never think about privacy issues." (SIV), Others were deeply worried:
"AI storing everything is scary. You feel exposed." (SV)

Perhaps the most striking result was that almost 90% of students said they would rely on AI more heavily if universities removed penalties, indicating unresolved ethical tensions and a complex dependency–distrust dynamic.

To visually consolidate students' ethical perceptions and concerns, **Figure 3** summarises the proportion of respondents expressing reservations about AI in teaching, hiring, job stability, and institutional penalties. While the qualitative data highlight complex emotional and conceptual tensions, the figure offers a clearer comparative view of how strongly each ethical dimension resonates with students. This bar chart displays the percentage of students expressing concerns about various ethical dimensions of AI use. All respondents (100%) rejected the idea of AI teacher-bots replacing human instructors. A large majority (85.1%) opposed AI-led hiring or screening, indicating widespread fear of algorithmic bias. Concerns about future job displacement were reported by 80.9% of students. Notably, despite these anxieties, 89.4% stated that they would rely on AI more extensively if universities removed existing restrictions, highlighting the tension between perceived risk and actual usage patterns.

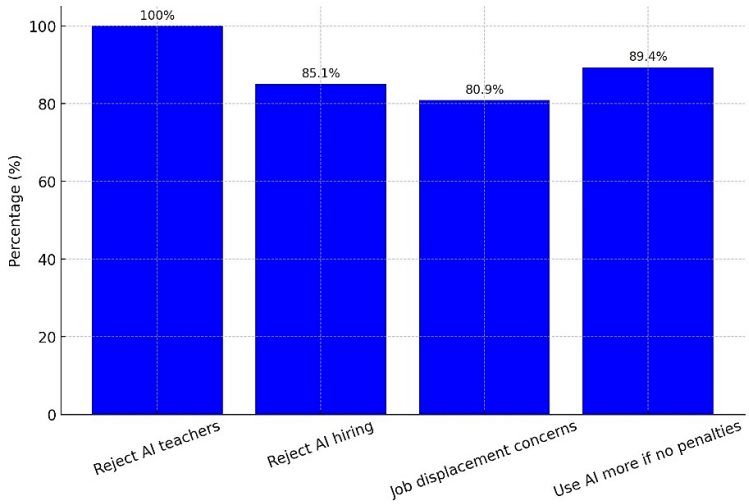

Figure 3. Students' awareness of and concerns about the ethical risks of AI.

As illustrated in **Figure 3**, student attitudes toward AI reveal a compelling paradox: while students are deeply critical of the ethical implications of artificial intelligence, they simultaneously maintain a strong dependence on it. The 100% rejection rate of AI teachers underscores the irreplaceability of emotional, relational, and pedagogical qualities associated with human instruction. The 85.1% opposition to AI-led hiring processes reflects a similar desire for human judgment in high-stakes evaluations, echoing global concerns about algorithmic discrimination and unequal treatment. The prevalence of job displacement anxieties (80.9%) aligns with broader international discourse on automation and labour precarity. Yet, the finding that nearly 90% would increase their AI use if penalties were removed illustrates a behavioural contradiction: students' ethical discomfort does not necessarily reduce their engagement with AI. Instead, it suggests a pragmatic, efficiency-driven orientation in which perceived academic benefits outweigh moral reservations. This ambivalence is consistent with the qualitative interview data, where students oscillated between seeing AI as helpful, harmful, or inevitable. Together, these findings deepen the understanding of how young people in Iranian higher education negotiate trust, dependency, and risk in relation to artificial intelligence.

5. Discussion

The findings of this study illuminate a complex and often contradictory landscape surrounding AI adoption in Iranian higher education. Students and instructors occupy markedly different positions in their expectations, anxieties, and ethical considerations, yet both groups reveal a shared sense of uncertainty about the long-term consequences of AI for learning, creativity, and equity. By situating these results within the broader literature, several patterns and tensions become visible that contribute to global debates surrounding AI in EFL education.

A first significant insight concerns the high prevalence of AI use among Iranian university students. Consistent with international trends reported in studies such as Albalkheel [8], Gao [13], and Abdullah Sharadgah and Abdulatif Sa'di [29], the majority of students in the present study used AI tools to enhance writing quality,

generate ideas, or streamline assignments. These findings support the argument that AI functions as a form of cognitive scaffolding, making academic writing more accessible to learners who struggle with linguistic accuracy or rhetorical organisation. The frequency with which students described AI as a "blueprint," "assistant," or "appetizer" reinforces the emerging global narrative that generative AI has become an everyday component of academic practice, particularly within EFL settings.

Beyond the thematic patterns identified across students and instructors, these findings must also be interpreted in light of the broader socio-educational conditions shaping higher education in Iran. Unequal access to digital infrastructure, particularly between urban and peripheral regions, affects students' familiarity with AI tools and may amplify the digital divide observed in the data. Moreover, the high-stakes assessment culture prevalent in Iranian universities likely reinforces students' reliance on AI for maintaining grades, completing assignments efficiently, and reducing academic pressure. Limited institutional provision of formal digital literacy training further contributes to students' trial-and-error approach to AI use, which helps explain their simultaneous dependence on and distrust of these tools. Finally, ongoing institutional uncertainty regarding AI policies creates ambiguity for both students and instructors, influencing attitudes toward privacy, ethical risks, and acceptable academic practice. Together, these contextual factors underscore that AI adoption in Iran is not merely a matter of individual choice or technological availability but is embedded in a complex educational system undergoing rapid digital transition.

Yet, while students overwhelmingly valued AI's practical benefits, their behaviours also indicate a shift toward expedience-driven academic cultures, echoing concerns raised by Eke [11], Sweeny [19], and Isaee and Barjesteh [2]. Several students admitted to paraphrasing AI outputs to avoid detection or using AI to complete assignments with minimal personal engagement, mirroring Dakakni and Safa's [20] findings on superficial reading strategies. This suggests that AI may be accelerating an existing trend toward productivity over depth, where academic success becomes increasingly detached from genuine learning. Iranian students, who often operate within high-stakes and exam-oriented systems, appear especially vulnerable to this shift.

In contrast to students' pragmatic orientation, instructors expressed a predominantly sceptical stance, emphasising issues of plagiarism, diminished creativity, and unreliable feedback. This scepticism aligns with previous scholarship indicating that teachers worldwide are uncertain about AI's capacity to provide personalised, context-aware support [1,2,5,17,21]. For many instructors in this study, AI not only threatens the legitimacy of assessment practices but also undermines pedagogical relationships central to EFL instruction. These concerns carry particular weight in Iran, where educational culture traditionally emphasises mentorship, human interaction, and the authority of the instructor. The finding that some instructors viewed training on AI as unnecessary or even counterproductive underscores a deeper sense of ethical discomfort, reflecting global anxieties described by Isaee [1] regarding the appropriateness of AI in educational decision-making.

The study also reveals a pronounced ambivalence among students regarding

ethical, social, and privacy risks. While most students appreciated AI's utility, many expressed unease about job displacement, algorithmic bias, and data surveillance. These fears align with literature on algorithmic inequity and existing analyses of privacy vulnerabilities in AI systems. Notably, however, a portion of students admitted that privacy concerns rarely influence their behaviour in practice. This contradiction reflects what Lutz [30] describes as the "privacy paradox," wherein individuals acknowledge risks but prioritise convenience or academic pressure. In the Iranian context, where students often navigate crowded classrooms, limited support, and competitive academic expectations, immediate utility appears to outweigh long-term concerns.

Another striking finding relates to equity and digital divides, which emerged in both survey responses and interviews. Students' concerns about unequal access to AI tools echo broader research on socio-economic disparities in digital engagement. While some students perceived AI as an opportunity for new forms of employment, others feared it could deepen existing inequalities by benefiting individuals with stronger technological resources or more stable internet access. These tensions are especially salient in Iran, where infrastructural inconsistencies remain acute and where AI usage depends heavily on institutional support, financial means, and digital literacy. In this sense, AI becomes both an enabler and a divider, generating academic advantages for some while exacerbating vulnerabilities for others.

The findings further highlight growing anxiety about labour displacement, with over 80% of students expressing concern that AI may replace human jobs. These fears resonate with the arguments of Acemoglu and Restrepo [5], and Georjieff and Hyee [15], who warn that AI-driven automation may deepen labour market inequalities. Interestingly, however, several students in this study expressed confidence that AI would generate new forms of employment. This ambivalence suggests a transitional moment in which Iranian students are simultaneously optimistic and apprehensive, uncertain about how AI will reshape professional futures but keenly aware of its disruptive potential.

Taken together, these findings reveal that AI adoption in Iranian higher education cannot be understood solely as a pedagogical development. Instead, AI sits at the intersection of ethics, economics, culture, and identity, shaping how students learn, how instructors teach, and how academic communities conceptualise knowledge and labour, as previously mentioned by other researchers [1,3,7,18,22,28,31,32]. While AI certainly offers promising forms of linguistic support and academic efficiency, it also introduces risks that disproportionately affect students who lack training, resources, or critical awareness. The tensions observed in this study (between utility and distrust, convenience and ethics, empowerment and inequality) reflect a global moment of uncertainty, but they also highlight the need for context-sensitive policy and AI literacy frameworks tailored to Iranian institutions.

Ultimately, the findings suggest that neither uncritical adoption nor outright rejection of AI will serve students or instructors well. What is required is a balanced approach that preserves human-centred pedagogical values while equipping learners and educators to navigate the ethical and cognitive complexities introduced by AI. As universities in Iran continue to confront the rapid expansion of AI technologies,

they must prioritise clear guidelines, training programs, and responsible integration strategies that address the unique social and educational realities of the Iranian context.

6. Conclusion

This study examined how artificial intelligence is reshaping learning, teaching, and ethical engagement within Iranian higher education, with particular attention to EFL contexts. The findings reveal that AI has already become a central part of students' academic practices, functioning as both a linguistic aid and a cognitive shortcut. Students valued AI for its efficiency, clarity, and ability to enhance writing quality; however, their reliance also fostered behaviours associated with reduced critical thinking, weakened creativity, and occasional academic dishonesty. Instructors, by contrast, expressed pronounced scepticism, perceiving AI as a threat to pedagogical integrity, authentic learning, and meaningful instructor–student interaction.

A second major conclusion concerns the ambivalent attitudes toward ethical risks. Students frequently acknowledged concerns about job displacement, privacy violations, and algorithmic bias, yet many admitted these worries had little impact on their day-to-day practices. This tension reflects a broader global pattern in which AI's practical benefits overshadow longer-term social dangers, particularly in highly pressurised academic environments.

The findings also highlight substantial disparities in digital literacy and access, suggesting that AI may widen existing educational inequalities in Iran. While some students viewed AI as a vehicle for opportunity, others saw it as a force that reinforces divisions between those with technological means and those without. These perceptions align with international research on the digital divide but take on heightened significance within Iran's uneven technological landscape.

Collectively, the study underscores the urgent need for contextually grounded AI literacy programs, stronger institutional guidelines, and ethical governance frameworks that address the realities of Iranian higher education [33]. Both students and instructors require support to navigate AI responsibly—students to avoid misuse and develop critical awareness, and instructors to integrate AI in ways that preserve academic integrity while leveraging its pedagogical strengths.

As AI technologies continue to evolve, Iranian universities face a pivotal moment. By adopting balanced, forward-looking strategies that emphasise transparency, equity, and human-centred learning, institutions can harness AI's benefits while mitigating its risks. Ultimately, the goal is not to replace human educators or diminish students' cognitive engagement, but to create an academic environment in which AI serves as a tool for empowerment, critical thinking, and meaningful educational development.

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