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Research paper

AI-Powered Tools and Their Utilization Among Iranian PhD Students in ELT: Opportunities, Challenges, and Implications

Hossein Khodabakhshzadeh[1], Toktam Naji[2], Hoda Mohsenzadeh[2*]

[1]Assistant professor, Department of English, Torbat-e Heydarieh Branch, Islamic Azad University, Torbat-e Heydarieh, Iran

[2]PhD student, Department of English, Torbat-e Heydarieh Branch, Islamic Azad University, Torbat-e Heydarieh, Iran

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*corresponding author: Mohsenzadehn@yahoo.com

Abstract

During the last few years, technological advancements, in general. and artificial intelligence (AI), in particular, have revolutionized the educational landscape, specifically teaching practices and learning environments. Regarding the fact that in our country, Iran, there is limited research on how AI impacts teaching effectiveness, this study aimed to delve into the utilization of AI-powered tools among Iranian PhD students in English Language Teaching (ELT), highlighting their opportunities, challenges, and implications. AI technologies are, in fact, increasingly transforming educational practices, yet their adoption within Iranian higher education, particularly in ELT, seems to have remained underexplored. Through a qualitative phenomenological approach, interviews were conducted with Iranian PhD students to uncover their experiences with AI tools. The findings revealed a range of benefits, including enhanced efficiency and improved learning outcomes, alongside significant challenges such as digital literacy gaps, infrastructural limitations, and cultural resistance. This study provides critical insights into the factors shaping AI adoption among Iranian ELT scholars and offers recommendations to maximize its potential while addressing existing barriers.

Keywords: AI-powered tools; Iranian PhD students; ELT

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Introduction

During the last few decades, the rapid growth of technology has transformed many domains, including health, finance, industry, and especially education. Among all technological advancements, Artificial Intelligence (AI) is one of the strongest forces that has transformed the way knowledge is constructed, disseminated, and evaluated. AI is no longer a future idea but an existing reality that is increasingly being integrated into regular scholarly activities and pedagogy.

In education, AI-driven technologies have shown great potential to revolutionize teaching and learning activities. AI-driven technologies encompass a wide array of applications such as intelligent tutoring systems, automated essay scoring, virtual personal assistants, adaptive learning solutions, natural language processing tools, and predictive analytics tools. These types of platforms not only facilitate more tailored learning processes but also support teaching staff in the development of the curriculum, assessment, and feedback, freeing the instructors from an important workload and enhancing students' participation levels (Hwang et al., 2020; Kipper et al., 2021).

Specifically in English Language Teaching (ELT), the use of AI is gradually but progressively being accepted. The application of AI technologies in ELT has made vocabulary learning more efficient, grammar checking, pronunciation evaluation, and interactive dialogic practice more effective. For instance, scholars have explored how generative AI tools impact writing fluency and academic confidence. Their findings reflect a balance between increased writing speed and growing concerns about originality (Bista & Bista, 2025). Additionally, smart feedback systems and data-driven learning suggestions enable teachers to adjust teaching methods according to students' personal needs. As the ELT profession further integrates technology, it is important to

realize how AI can make teaching more effective and learners more autonomous (Chen & Liu,2021).

Recent research underscores the evolving relationship between doctoral students and AI tools. These tools help in negotiating authorial voice while benefiting from machine support (Parker et al.,2024).

In all developed countries, AI integration in higher education is today an institutional process supported by well-developed infrastructure, continuous teacher training, and national education policy. In countries like Iran, however, despite growing interest in AI, its deployment in higher education, particularly in ELT, remains relatively limited and unexplored. Iranian Ph.D. students, as the vanguard of research and scholarship in ELT, are more often than not faced with specific challenges whenever they attempt to embrace AI-based tools as part of their research and scholarship. These challenges do not only emanate from technological and infrastructural setbacks but also from socio-cultural and institution-related matters which can hinder proper adoption. PhD candidates pursuing ELT perform many academic tasks like research, writing academic papers, teaching undergraduate students, and following the latest trends in language pedagogy. AI-driven software can help ease many such pressures by assisting in literature reviews, data analysis, teaching languages, academic writing, and even developing critical thinking. Nonetheless, despite these apparent advantages, how much Iranian PhD students really utilize AI tools and understand them has not been explored extensively.

Another component of complexity arises from ethical concerns as well as digital illiteracy. Although the majority of students receive AI warmly, a minority is skeptical because they are concerned about data confidentiality, honesty in academics, as well as excessive reliance on computer-aided work. Also contributing to the gap are the unavailability of structured training

programs and unavailability of international platforms due to economic sanctions and internet filtering. The result is a digital gap that cannot enable many brilliant students to utilize AI tools maximally.

Here, the present study tries to explore the application of AI tools among Iranian PhD students of English Language Teaching and its perceived benefits, encountered challenges, and implications for teaching languages in Iran. With a desire to obtain students' real experiences and data, the study aims to close the research gap and be able to provide a more complete perspective of the phenomenon.

To plan this research, a qualitative phenomenological approach was utilized, which allowed the researchers to thoroughly explore participants' lived experiences and comprehension. The research, in fact, was guided by the following question:

RQ: What are the benefits and problems for Iranian PhD students in ELT in the use of AI-based tools in their learning practice?

Review of Literature

In recent years, the role of Artificial Intelligence (AI) in educational systems, its potential to revolutionize them, and the actual practical challenges of implementing it have been increasingly researched. With education paradigms evolving towards more technologically enabled, data-driven, and personalized models, AI-based applications have emerged as prime movers in higher education and English Language Teaching (ELT) in particular.

AI application in universities involves many functions., from smart learning systems and automated grading to learning analytics, academic advising, and research assistance. yet supporting teaching efficiency, these applications also enable instructors to offer customized

responses, monitor student progress, and support struggling students (Holmes et al., 2019; Hwang et al., 2020). For PhD students, particularly those who conduct research extensively and get them published, AI can assist with the search of literature, data analysis, and even with academic writing through the use of grammar correction and citation management tools.

Chen and Liu (2021) argue that the increasing number of AI-based platforms can have the capability to democratize access to an academic support of high quality. But they also note that it depends on a variety of things such as infrastructure technology, institutional supports, and users' preparedness. In the highly technologically developed education systems of North America, East Asia, and chosen regions of Europe, the deployment of AI is facilitated by extensive digital policies, schemes for developing faculty, and continued investment in education technology.

Conversely, in developing environments, including Iran, the integration of AI into higher education has been dispersed and gradual. Evidence indicates that infrastructural limitations, internet censorship, and international sanctions' impacts especially restrict access to high-end AI platforms (Sadeghi & Ahmadi, 2020). These are worsened by the overall lack of digital literacy among students and teachers, and too few specialist training sessions which would facilitate effective use of AI tools.

The ELT field has also witnessed growing attention to the application of AI technology for language teaching and learning specifically. Tools such as AI-based chatbots, speech recognition software, grammar correctors, and adaptive vocabulary learning software are being employed in language classrooms ever more (Kipper & Rachwał, 2021; Farhady et al., 2021). Ayedoun et al. (2021) and Javaid et al. (2024), for example, have demonstrated that AI-based conversational agents can reduce speaking anxiety and increase willingness to communicate (WTC) among EFL learners. Following a similar line of research, Derakhshan and Ghiasvand (2024) found that AI-

powered tools play an influential role in enhancing learner motivation and enjoyment, especially when integrated with adaptive technologies. Muthmainnah (2024), also, revealed that an AI-based chatbot, AI-CiciBot, can help EFL learners to experience less speaking anxiety by creating a low-stress environment for oral interaction. Similarly, Amelhay and Sakale (2024) highlighted that listening and speaking are two important skills in English language acquisition which are often ignored and suggested that AI-powered applications can bridge these gaps by offering accessible, learner-centered, and interactive language experiences.

Research shows that AI has also a significant role to play in addressing some of the long-standing problems in ELT, such as a lack of personalized instruction and too little classroom conversation time. For example, AI programs can assist students in practicing pronunciation outside of class, support essay writing, and simulate English conversational interactions. Teachers can utilize AI to assess student performance trends and adjust their methods of teaching (Huang & Yu, 2019). Very recently, Park et al. (2024) emphasized that large language model chatbots can improve speaking practice aligned with specific pedagogical goals.

However, concerns remain over the limitations of these tools. AI-based feedback is not necessarily contextually appropriate, especially when dealing with subtle or artistic applications of language. Taking this aspect into account, Hockly (2023) warns that despite the benefits of AI in language instruction, overreliance on it without pedagogical scaffolding may restrict the development of critical thinking abilities. There is also the risk of students relying too heavily on AI for learning, which can compromise the development of critical thinking and communicative skills. As Kipper and Rachwał (2021) point out, AI needs to be utilized as an addition—not a substitute—for human interaction in language learning.

While Iranian students and academics have become increasingly aware of the potential of AI use, their application in reality is hindered by a range of contextual limitations. Farhady et al. (2021) identified several limitations, including poor internet connectivity, lack of support for teaching technology from funds in the institution, and limited access to foreign platforms due to sanctions. These constraints not only affect availability but also reduce the willingness of students to learn and test with AI-based tools.

Sadeghi and Ahmadi (2020) indicated that Iranian university students are eager to employ AI-based tools in learning, but their use is superficial and may be limited to basic grammar checkers or translation software. This is primarily due to the fact that they receive no training and formal education on how to embrace these tools in academic work effectively. The authors urge curriculum transformation and the inclusion of digital literacy modules that can prepare students to engage with ai critically and constructively. In this regard, Skrebeca et al. (2025), also, believes that structured AI integration policies and training are needed to maximize its pedagogical benefits for EFL learners.

Lastly, cultural attitudes play an important role. In some Iranian learning communities, the use of AI is suspicious or even academic dishonesty. Sharifi and Bahrami (2022) explored the ethical concerns of AI usage and found that various teachers were concerned about plagiarism, overdependence, and a loss of academic integrity. They argue that there needs to be clear ethical principles and institutional practices to enable the ethical application of AI in education.

Methodology

This study employed qualitative research design informed by phenomenological research to explore Iranian PhD students studying English Language Teaching (ELT) learners' attitudes,

perceptions, and experiences with regard to using AI-based tools in their studies. The phenomenological approach was selected since it is particularly appropriate to capture individuals' lived experience and how they understand a given phenomenon. Through this method, the researchers could probe the participants' perspectives intensively and in so doing to investigate a relatively new and emerging area of educational technology in a local context. This is in line with prior empirical work that used qualitative designs to capture learner experiences with AI tools in EFL (Woo & Choi, 2021).

Design

This study utilized a qualitative method that was informed by phenomenological research to explore Iranian PhD students in ELT's experiences, perceptions, and attitudes toward the use of AI-based tools in academic tasks. The phenomenological approach was utilized due to its suitability for comprehension of individuals lived experiences and how they understand a certain phenomenon—incorporating artificial intelligence into academic practice at the doctoral level.

Participants

The participants in the study were 15 Iranian PhD students of English Language Teaching programs at different branches of Islamic Azad University and other Iranian universities. The participants were selected using purposive sampling, a method often employed in qualitative research when the goal is to gain rich, detailed, and relevant information from individuals who possess specific knowledge or experience related to the phenomenon under investigation. All the participants had some degree of experience using AI-powered tools such as grammar checkers, paraphrasing tools, chatbots, citation managers, or language generation models like ChatGPT.

Efforts were also exerted to offer diversity within the sample in terms of gender, university affiliation, stage of doctoral study, and level of technological familiarity. This diversity allowed for a broader repertoire of knowledge and ensured that data reflected both commonality and variation in students' experiences. Participation was voluntary, and all participants were given information about the research purpose and assured of the confidentiality and anonymity of their answers.

Data Collection Procedure

The primary method of data collection was semi-structured interviews. The semi-structured nature of interviews allowed the researchers to guide the discussion with open-ended questions while remaining open to participants sharing more about their experiences, providing examples, and raising other points that were significant. Interviews were either carried out in person or via video online platforms such as Zoom or Skype, depending on the convenience and willingness of the participants.

The interview guide was carefully crafted to yield rich responses on various dimensions: students' uses of AI-based tools in their studies, the perceived benefits and limitations of these tools, usage factors at institutional and individual levels, and thoughts on the pedagogical and ethical implications of AI on ELT research and teaching. Before conducting full data collection, a pilot interview was conducted to test for the applicability, sequence, and sufficiency of questions. Pilot feedback was used to revise the final interview glide.

All the interviews were 30-60 minutes in duration and were tape-recorded-subject to participants' agreement-for verbatim transcription. Transcripts were then forwarded to participants for them to read the typed transcript of their interview to confirm the accuracy of what they had

stated and make any necessary explanation. This participant validation ensured that the data collected was credible and trustworthy

Data Analysis

The data collected were analyzed with thematic analysis, a systematic and flexible method for coding, analyzing, and reporting patterns (themes) in qualitative data. The process employed the six-step model proposed by Braun and Clarke (2006): familiarization with data, initial generation of codes, searching for themes, reviewing themes, definition and naming of themes, and final report production.

Initially, the researchers interacted with the data by reading and re-reading the transcripts to come up with initial ideas and repeated expressions. The codes were identified and then organized into broad categories or themes that captured the essence of participants lived experiences.

Themes were established to represent significant areas such as "Benefits of AI Use," "Barriers to Access," "Digital Literacy Challenges," "Ethical Concerns," and "Perceived Overreliance on AI Tools." For instance, remarks about faster research processes, improved writing, or customized learning support were classified under the benefits theme, while remarks about internet censoring, lack of institutional help, and resistance from teachers were included under challenges.

In order to ensure the reliability of analysis, the same transcripts were coded independently by two researchers who later sat down to cross-check and solved the discrepancies. This inter-coder reliability test ensured minimization of personal bias and enhanced the rigor of thematic analysis.

Triangulation was also achieved through peer debriefing sessions and member checking, ensuring both dependability and confirmability.

Validity was addressed through a number of strategies. Interview questions were deliberately tied

to the study's research question and the content was checked and cleared for suitability by ELT specialists. The researchers also had an audit trail in the research where they recorded decisions regarding coding, building themes, and interpreting data.

Overall, the approach used in this study was designed to record the nuanced and context-dependent way Iranian PhD students studying ELT are experiencing, interpreting, and responding to the coming of AI tools in their learning.

Results

The research data showed a few key themes that address the question including the extent to which Iranian PhD students faced advantages and issues related to their implementation of AI technologies in educational contexts. In the following part, the findings based on the research question are presented.

***Research Question*:** What are the benefits and challenges faced by Iranian PhD students in ELT when utilizing AI-powered instruments in their educational activities?

Through analyzing the transcriptions, the researchers could identify the following themes about the benefits and challenges faced by Iranian PhD students in ELT when utilizing AI-powered instruments in their educational activities:

1- Saving of time and efficiency (Benefit).

2- Access to diverse information and linguistic resources (Benefit).

3- Research capabilities among students improved through AI tools (Benefit).

4- Personalized Learning and Feedback (Benefit).

5-Infrastructure and Sanctions: Internet Speed, Filtering, Access (Challenge).

6- Digital Literacy and Familiarity with AI Tools (Challenge).

7- Overreliance on AI, at the risk of critical thinking being lowered (Challenge).

8- outputs error-prone and unreliable (Challenge).

9- Institutional resistance to the use of AI tools, since viewed as cheating (Challenge).

10- Financial limitations and funding lack (Challenge).

11- Misinterpretation and misapplication of AI tool (Challenge).

12- Cultural Attitudes and Resistance to Technology Adoption (Challenge).

Among these **12** themes, four themes of *Improvement of Saving time and efficiency, Infrastructure and Sanctions, Digital Literacy, and Overreliance on AI* were found to be more repetitive and recurring.

1. Saving of time and efficiency (Benefit):

Along with the availability of AI tools, a large number of students would be able to benefit from what the technology provides: saving them time and effort because they can automate very time-consuming tasks and enable them to redirect and focus on other more critical aspects of research. Besides, AI tools facilitate processes such as data analysis and literature review in a really effective way, making them quite efficient. The students would delve deeper into their topics, which would add to the overall quality of their outputs in academics.

As you see, the following part provides some of the participant exerts as examples:

> *One of the usage and benefits of using AI technology is for language learning and engaging students in the learning process. Saving students time is another useful factor of AI-powered tools.*
> *The advantages of using artificial intelligence in educational activities are significant saving of one's time and energy and the use of interesting solutions and ideas by artificial intelligence for some educational issues, and the only challenge that seems to me is probably becoming dependent on the ease of using Artificial intelligence and maybe a little laziness in thinking and doing things.*

The first interesting point related to using AI is its fast information processing. Many PhD students have a lot to do in their work and society, so time-saving items are very crucial for them but we should be aware that we are not allowed to miss accuracy in the price speed.

2. Infrastructure and Sanctions: Internet Speed, Filtering, Access

Many of the respondents mention sanctions, filtering of the internet, or even lack of access to more advanced tools due to financial and infrastructural challenges in Iran. This state of affairs seems like a constant refrain throughout their responses-a grave challenges the student community faces. These means of hindrance have gone a long way in weakening their capacities for full usage of AI-powered tool usage, many times reverting them to workarounds such as VPNs, which slow down productivity further. Beyond that, the cost of accessing paid applications of AI makes it hard for many students to get a feel for recent technological advances.

For this part, the following responses have been provided as examples:

To talk about challenges, as we all know, in our country Iran, the adoption and development of AI face significant hurdles. Iranian researchers and developers do not have access to many resources because of the sanctions imposed by foreign countries. This isolation has made the development and application of AI technologies very slow if not impossible.

Collaborating with international peers has become a lot easier than before. The AI tools help with translation and communication, but sometimes the AI-generated translations are not clear enough, and it can lead to confusion and misunderstanding. It's not always easy to get the meaning across different cultures. Also, many platforms and sites are filtered for Iranian people. We cannot register and use practical apps. we have to use a VPN and pay for it; the speed of the internet cannot support these tools working properly.

3. Digital Literacy and Familiarity with AI Tools:

Many of the respondents consider the biggest limitation to be a lack of training and proficiency in the usage of AI-powered tools. Workshops and proper training are called for to enhance digital literacy. Too many students feel overwhelmed by the depth of these powerful tools, with all their full potential remaining underutilized, without adequate guidance. Also, without this institutional

support or organized educational curriculum for students, leaving them to their own devices, the rapid pace at which these AI technologies are developing is even more challenging to keep pace with. This sort of focused training could significantly enhance their confidence and skill levels in the application of AI to their work. Like the previous section it is essential to review some the responses as examples.

One of the participants asserted:

> *A lot of it comes down to accessibility and familiarity with technology. Not everyone has easy access to the latest devices or high-speed internet, which can be a real barrier. Then there's digital literacy—students who are more comfortable with tech are more likely to adopt AI tools. Institutional support is another big factor; when universities offer training or encourage the use of these tools, it makes a big difference.*

Another student said:

> *AI-driven language models and applications can support English language proficiency, providing instant grammar checks, translation services, and personalized language learning. However, these benefits come with their own set of challenges. There is a notable digital literacy gap among university students, which can hinder the effective use of these tools. Many students lack the necessary skills or background to utilize these technologies, which leads to a potential underutilization of available resources. Moreover, there is a risk of becoming overly dependent on AI, which might reduce the development of critical thinking and traditional analytical skills.*
>
> *Generally, I think AI is a positive tool for higher education students. It saves time, it facilitates difficulties, it gives directions for different issues, and AI provides me with new insights into trends in ELT that I hadn't considered before, it helps in different ways, but there is a danger of dependency and losing our own voice and creativity also due the nature of artificiality the interaction with AI does not have the real characteristic of interactional situations which may affect parts of outcomes. The last point is the less eagerness for technology and digital literacy among some university students. by conducting needed teaching programs, it can help much better and sufficiently use these tools.*

4. Overreliance on AI, at the risk of critical thinking being lowered

Many of the participants consider the biggest limitation to be a lack of training and proficiency in the usage of AI-powered tools. Workshops and proper training are called for to enhance digital

literacy. Some students feel overwhelmed by the depth of these powerful tools, with all their full potential remaining underutilized, without adequate guidance. Also, without this institutional support or organized educational curriculum for students, leaving them to their own devices, the rapid pace at which these AI technologies are developing is even more challenging to keep pace with. This sort of focused training could significantly enhance their confidence and skill levels in the application of AI to their work.in the following lines some of the answers are presented for review.

One of the students said:

> *The advantages of using artificial intelligence in educational activities are significant saving of one's time and energy and the use of interesting solutions and ideas by artificial intelligence for some educational issues, and the only challenge that seems to me is probably becoming dependent on the ease of using Artificial intelligence and maybe a little laziness in thinking and doing things.*
>
> *I've found that AI programs help to analyze different data much faster than traditional methods. so, the matter of time is important here and PhD students can focus more on the interpretation of information rather than focusing on the details. Another big advantage of using AI for me is breaking down language barriers. It's made global research so much more accessible. I want to add, there are worries about becoming too dependent on these tools you know I don't want to lose my ability to organize myself without them.*
>
> *Many students lack the necessary skills or background to utilize these technologies, which leads to a potential underutilization of available resources. Moreover, there is a risk of becoming overly dependent on AI, which might reduce the development of critical thinking and traditional analytical skills.*

Totally, we can conclude that AI-based tools have great benefits for Iranian PhD students in ELT: higher efficiency in work, better learning, and enhanced collaborative interaction. They also pose many challenges. Technical barriers, digital literacy gaps, financial constraints, risks of dependency, cultural resistance, and finally, data privacy and accuracy. The solution lies in solving these challenges by way of better infrastructure, targeted training, and a cultural shift that fosters

a positive attitude toward technology adoption; this could indeed make full use of AI tools by educators within educational settings.

Discussion of the Findings

The findings of this study reflect on a complex environment in which Iranian PhD candidates of English Language Teaching (ELT) both recognize favorable benefits and significant challenges toward the use of AI-based tools in academic activities. Through thematic analysis of the participants' interview responses, the time-saving efficiency, augmented research capability, and customized learning were key advantages, while digital illiteracy, infrastructural limitations, over-reliance on AI, and institutional resistance were among the most-mentioned disadvantages. The subsequent discussion addresses these findings from the literature and theoretical frameworks, and presents insights into wider implications for ELT research and practice within the context of Iranian higher education.

Among the most frequent benefits quoted in participant feedback were the abilities of AI applications to maximize efficiency and minimize time. Students detailed how AI-supported programs assisted with data analysis, created abstracts of literature, and provided immediate language support so they could focus on higher-order tasks such as argumentation development, theoretical conceptualization, and critical thinking. This finding is strongly validated by previous research from Hwang et al. (2020), who discovered that AI tools increase improved time management and reduce intellectual overload in the context of higher education. In the context of doctoral education, where time pressure is a pressing need, this productivity is particularly useful. Aside from this, the participants also cited the role of AI in aiding scholarly writing in grammar checking, paraphrasing, improving vocabulary, and suggesting structure. This accords with

Farhady et al. (2021) conclusion, whose research revealed that writing assistants based on AI can be effective scaffolds when used to support non-native English-speaking researchers. Additionally, some of the students reported that they utilized AI to research new ELT trends, acquire hitherto unknown theoretical frameworks, and synthesize amounts of literature. This means that AI programs not only assist with mechanics but also act as portals to intellectual inquiry—a finding adding a new depth to current scholarship.

Another recurring theme was individualized learning. Attendees emphasized the adaptive nature of AI programs that respond feedback based on user input. This concurs with Kipper and Rachwał's (2021) argument that AI allows learners to acquire content at their own pace and receive instantaneous feedback modified to suit individual learning trajectories. This customization is particularly convenient in the context of ELT, where there is significant diversity of learners and traditional classroom teaching often cannot address the needs of individuals. Besides these benefits, the study also uncovered a range of impediments to the full potential of AI adoption among Iranian PhD students. Foremost among these was the issue of infrastructural limitations, including slow internet, restricted access to global platforms, and the impact of global sanctions. These institutional limitations are in accord with the work of Sadeghi and Ahmadi (2020), whose study documented similar limitations within Iranian higher learning institutions. The customers frequently complained of using VPNs to be able to access AI platforms, which not only impaired the speed and effectiveness of the platforms but also raised ethical and security concerns.

Closely linked to infrastructure is the issue of digital literacy. The majority acknowledged a lack of skills to effectively make use of and understand advanced AI tools except for the skin-deep applications. The absence of institutionally funded training or structured support has created a gap

between availability and effective use. This is in line with Chen and Liu (2021), who argued that incompetence of users and lack of exposure to digital technologies eroded perceptions of AI usefulness. Without targeted interventions—e.g., workshops, instructor-led classes, or course integration—the gap will continue to expand, considering the rapid development of AI technologies.

Another frequent theme was resistance at the institutional and cultural levels to implementing AI, with some respondents reporting that teachers discouraged or prohibited the use of AI tools, associating them with plagiarism or cheating. While a legitimate concern, it also reflects a failure of advanced understanding about how AI can be productively and ethically deployed into scholarship. Sharifi and Bahrami (2022) conveyed that moral concerns about AI are widespread in Iranian universities but typically founded on anxiety or lack of knowledge, rather than informed thinking. This resistance can be addressed not only by policy clarification but also cultural transformation in academe.

The hardest finding is likely the one concerning students' anxiety; the point that AI reliance would diminish their critical thinking power, academic voice, or personal creativity. While such concerns are legitimate, they lead towards the importance of pedagogic balance. AI, as noted by some participants, is to be employed as an addition, not a replacement, to human cognition. This insight aligns with the caution by Kipper and Rachwał (2021) that while AI can enhance autonomy and productivity, this must not be at the cost of the interpretive, critical, and interpersonal dimensions of educational work.

Together, the findings of this study reveal a double reality. On the positive side, Iranian PhD ELT students have better chances to learn, write, and research more efficiently and productively by using AI tools. On the negative side, structural, pedagogical, and cultural barriers restrict the

range and long-term extent of such benefits. Such duality is not just peculiar to Iran but is particularly exacerbated under situations such as sanctions, filtering, and shortcomings in educational reform.

These findings have several implications. For policy makers and academic leaders, it is crucial to realize that access to AI tools alone is not sufficient. Infrastructure needs to be improved, and inclusive policies must be designed for equal access and ethical use. For university administrators, including digital literacy modules in ELT courses and introducing a culture of experimentation and prudent AI use can make the doctoral community more future-proof. For the teachers and PhD supervisors, the shift has to be towards embracing AI as a learning partner and not an enemy. Inter-disciplinary collaborations and faculty development programs can help bridge the gap between teaching and innovation.

Finally, for scholars, this study opens up new lines of inquiry: longitudinal studies may explore how use of AI alters over time among doctoral students, and intervention studies may explore how training influences rates of adoption and outcomes in AI. Mixed-method studies may also provide richer findings on how perceptions are related to how they are used. Finally, the study emphasizes taking AI adoption in ELT not just as a technology-related concern but as a complex process with infrastructure, literacy, ethics, pedagogy, and culture. The experience of Iranian PhD students captures both the promise and the danger of AI in higher education—information that is increasingly relevant as higher education systems around the world move towards more integration of new technologies.

Conclusion

This study aimed to explore how Iranian PhD students in English Language Teaching (ELT) engage with AI-powered tools in their academic and research practices, focusing on both the opportunities and challenges involved. The findings revealed that while AI tools provide substantial benefits such as enhanced efficiency, personalized learning, and improved writing and research capabilities, their adoption is hindered by infrastructural, institutional, and cultural barriers. In particular, issues like internet restrictions, lack of access to advanced platforms, limited training, and ethical uncertainties reduce the effective integration of AI into doctoral-level academic work.

The results also highlighted a growing awareness among students of the need to use AI tools responsibly. While many students expressed appreciation for the speed and convenience AI offers, they also voiced concerns about overreliance, the potential weakening of critical thinking skills, and the erosion of academic integrity. This balance of enthusiasm and caution suggests that AI's role in higher education should be framed not as a replacement for human thought, but as a complementary support for academic processes.

Moving forward, it is essential that universities and policymakers develop structured training programs and provide reliable access to AI platforms in order to ensure ethical, equitable, and effective use. Institutional openness, cultural acceptance, and technical infrastructure must work together to create an environment where AI can be leveraged for the benefit of learners and educators alike.

Future research can further explore how long-term exposure to AI affects learning habits, research quality, and academic identity among PhD students, particularly in under-resourced contexts like Iran.

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Hossein Khodabakhshzadeh is an assistant professor of TEFL with more than 25 years of experience in teaching different courses of BA, MA, and PhD. He has supervised several MA theses and PhD dissertations. He has also published some articles and books and attended some national and international conferences. His area of interest is teaching English, teacher education and language assessment. Currently he is the vice president for academic affairs at Islamic Azad University.
email: hkhodabakhshzadeh@iau.ac.ir
Affiliation: Department of Teaching Foreign Languages, ToH.C., Islamic Azad University, Torbat Heydarieh, Iran
ORCID: https://orcid.org/0000-0001-9422-3245

Toktam Naji is currently pursuing her Ph.D. in TEFL at Islamic Azad University, Torbat Heydarieh, Iran. She holds an M.A. in TEFL from Islamic Azad University of Mashhad, where she also serves as a university lecturer. Her primary research interests focus on teacher education, language assessment, and psychometrics. Address for correspondence: Department of Foreign Languages, Torbat Heydarieh, Iran.
Email: toktam.naji59@gmail.com
https://orcid.org/0009-0000-3128-8949

Hoda Mohsenzadeh is currently a PhD candidate at Islamic Azad University, Torbat Heydarieh, Iran. She got her MA in teaching English from Kharazmi University. Her research interests include teacher education, discourse analysis and ESP. Address for correspondence: Department of Foreign Languages, Torbat Heydarieh, Iran.
Email: Mohsenzadehn@yahoo.com
ORCID: https://orcid.org/0009-0001-3077-4141