

IRANIAN AND IRAQI PROFESSORS' PERSPECTIVES ON AI LITERACY: EVIDENCE FROM TEFL AND NON-TEFL DISCIPLINES

SALIM DADA NAYYEF

PHD CANDIDATE, DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE, URMIA UNIVERSITY, URMIA, IRAN, EMAIL: SALIMDNAYYEF@GMAIL.COM

PARVIZ ALAVINIA

ASSOCIATE PROFESSOR IN TEFL AND APPLIED LINGUISTICS, DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE, URMIA UNIVERSITY, URMIA, IRAN EMAIL: p.alavinia@urmia.ac.ir

Abstract

Informed by the call for further research on AI in recent years, the researchers in the current investigation sought to probe the degree of AI literacy among Iranian and Iraqi TEFL and non-TEFL professors. To gather data, the adapted AI questionnaire developed for the study was administered to a total of 120 Iranian and Iraqi university professors. Also, one-sixth of the participants (20 professors) were invited to take part in the interview. The findings revealed that though both Iranian and Iraqi TEFL and non-TEFL professors judged their AI literacy to be high, some differences were pinpointed between the way Iranian and Iraqi participants perceived their AI literacy. Also, as the qualitative findings indicated, a range of different AI use purposes were referred to by the respondents, such as hunting for research topics, finding relevant sources, and requesting paper summaries and article highlights. Moreover, as regards AI needs, the professors' urgent call for ongoing, focused and systematic training and workshops was the most prominent issue. Finally, concerning the perceived challenges, lack of equal access to AI tools, the danger of academically dishonest behavior and misuse of AI were underscored by most interviewees. The implications of findings are discussed throughout the paper.

Keywords: AI literacy, Iranian and Iraqi professors, perceptions, TEFL and non-TEFL instructors

INTRODUCTION

The arrival and outburst of artificial intelligence (AI) assistant tools in recent years, and their speedy progression and penetration into different aspects of our personal, social and academic lives has marked a remarkable milestone in the history of scholarly endeavors and expedited the process of knowledge generation and dissemination (e.g., Gökçeşlan et al., 2024; Karaman & Göksu, 2024). This swift development of AI technology behooves due attention and awareness on the part of (educational) researchers to unveil different unexplored ramifications of AI literacy and use.

One of the principal areas of research in recent years has dealt with the perceptions of different educational stakeholders, including teachers, professors and students, concerning the use of AI tools, and the possible opportunities or challenges created by AI technology (Ağca & Korkmaz, 2025; Li et al. 2024; Otermans et al. 2025; Torun & Özer Şanal, 2025). Another major concern ensuing from the overuse of AI technology in various social, educational and academic perspectives is the risk of irresponsible utilization of AI which is likely to lead to social injustice and academic/research dishonesty (e.g., Bannister et al. 2023; Rahmati & Nushi, 2023; Sadeghi & Pourbahram, 2023; Vaezi et al. 2024; Wang & Stockwell, 2023; Zhao et al. 2022). In this regard, appropriate training and judicious monitoring is required on the part of educational and academic administrators to instill responsible and honest AI demeanor, and minimize, if not totally outroot, deceitful and fraudulent conduct.

A fledgling, yet multifaceted entity, AI has come to the foreground of attention of a great many researchers in the current decade, and is being probed from a variety of perspectives. Nevertheless, any attempts targeted at researching AI must commence with a thorough understanding of its status-quo in diverse educational, academic or research contexts. Accordingly, the researchers in the present study decided to survey the degree of AI literacy within the academic community of Iran and Iraq. In so doing, Teaching English as a Second Language (TEFL) and non-TEFL professors' AI literacy was gauged to come up with a better perception of the way academics were aware of, made use of and perceived AI tools. The study at hand is thought to be significant on account of the fact that it's one of the first comparative works conducted in the two academic context of Iran and Iraq. In addition, the study findings will

be interesting and offer proper implications owing to the fact that the current research also makes a comparison between TEFL and non-TEFL community.

REVIEW OF LITERATURE

The ubiquity of AI as a handy tool in recent years has led the researchers in various fields, including education, to consider the utilities of this technological breakthrough in creating more optimum conditions for teaching, researching and learning. Though AI tools have been in use in medical sciences and hard sciences since long, research on the applications and implications of AI use in education and particularly applied linguistics has been a more recent phenomenon. The impact of AI and chatbots on education and learning in the current era has been so immense that Karaman and Göksu (2024) refer to it as a ‘paradigm shift’. The contributions of AI to educational reform have been numerous. Nowadays, AI tools can aid the educationalists and academics in multiple ways, for instance, via ‘personalized learning platforms’, ‘automated assessment systems’, and ‘facial recognition systems’ (Yurt & Kaşarçı, 2024, p. 308).

Though studies on AI are miscellaneous and have tried to address the issues and concerns surrounding this field from manifold perspectives, the researchers in this section commence the review of previous works by going through the studies addressing AI perceptions. As a case in point, Li et al. (2024) sought to explore the perceived effectiveness of AI-integrated intercessions by the trainers of autistic children on the learning outcomes of this group of learners. The sample of the study consisted of 20 instructors as well as the parents of autistic children who were asked to take part in semi-structured and focus group interview sessions. Based on the obtained findings, the major contribution of using AI-empowered program, based on the participants’ perspectives, was related to more personalized learning experiences by the learners, as well as their heightened engagement in the learning process.

In another investigation focusing on AI perceptions, Torun and Özer Şanal (2025) examined the perspectives of some 50 individuals from the academic context (comprising 36 university students and 14 academicians) concerning the use and efficacy of AI, in general, and generative AI (GAI), in particular. The main means of data collection employed by them was semi-structured interview. The findings of their study pointed toward the need for upgrading GAIs, particularly as regards the amount of support they provide for learning and teaching, as well as their role in granting easy access to the required information. The need for holding GAI-related training sessions was also highlighted by the participants.

In another investigation, Ağca and Korkmaz (2025) probed the impressions of a cohort of pre-service teachers on the effect of AI on anxiety reduction or development. Opting for a mixed-methods research design, they initially implemented an AI-oriented training program for teachers, and then administered the AI anxiety scale and semi-structured interview. In line with the obtained findings, it was concluded that while AI-focused training help with lowering the learning anxiety, it led to an increase in other facets of their anxiety, including ethical perspectives, privacy issues, and reduced creativity among other concerns.

Another notable line of research on AI in recent years has been allotted to investigating the concepts of social injustice and academic dishonesty emanating from the reign of AI. Sadeghi and Pourbahram (2023), for instance, reviewed the published papers on the notion of social injustice over an eight-year period. The findings of their research pointed toward an eye-catching difference between the degree of attention toward social justice prior and successive to pandemic era, with post-pandemic researchers being more sensitive toward such issues and hence revealing lower degrees of social injustice. Their results also highlighted the critical role of training in upgrading the researchers’ knowledge about such touchy notions as social injustice.

Also, as regards the notion of academic dishonesty, reference can be made to the research conducted by Vaezi et al. (2024) which focused on the concept of academic dishonesty via examining the resources students utilized throughout online exams. In doing so, 91 engineering students (38 males and 53 females) were asked to report the way they benefited from the resources while taking online tests. Running factor analytical statistics, they detected a high degree of external resource use among the participants. Thus, they concluded that the ubiquity of virtual teaching and testing in post-pandemic era is to be regarded as the main cause of such academic dishonesty.

The last domain of research on AI is the one scrutinizing the notion of AI literacy. The outburst of AI technology, epitomized in the prevalence of ChatGPT and other Chat bots, has signified a turning point in the history of technology-integrated education, which necessitates specialized and technical digital skills and literacy in the information technology era (e.g., Cote & Milliner, 2018). In their study within the realm of AI literacy, Wang and Wang (2022) noted that the underlying building blocks of such literacy include being aware of the uses of AI, using it in a proper and responsible way, evaluating the consequences of its application, and being wary of ethical considerations. In their attempt to come up with a proper tool for AI literacy appraisal, they developed a 12-item scale. Their analysis in this regard divulged noteworthy relationships among AI literacy, everyday use of AI tools, and perceptions of Chat bots.

Finally, Ng et al. (2023) worked on devising an AI literacy questionnaire. In their review of the factors underlying AI literacy, they singled out four dominant aspects of AI literacy, referred to as behavioral, cognitive, affective, and ethical learning. Thus, their designed AI literacy scale was composed of 32 items measuring the afore-said dimensions of learning and knowledge required for this literacy. In the process of validating the questionnaire, they resorted to a variety of techniques, including interview, expert view, piloting and confirmatory factor analysis. Then the questionnaire was piloted with a cohort of 363 students from the secondary school context in Hong Kong. The analysis revealed the reliability and validity of their developed AI scale.

Though the review of the related studies indicated that literature, particularly in the recent years, is replete with probes into miscellaneous facets of AI efficacy, perceptions, opportunities and challenges, it seems that one of the areas which is in need of further investigation is AI literacy, especially in underresearched communities like Iran and Iraq. Informed by this research lacuna, the researchers in the current study decided to measure the degree of AI literacy among Iranian and Iraqi TEFL and non-TEFL instructors. Finally, the participants' impressions of the purposes for which AI-assistance tools were utilized, as well as the principal AI-related needs and challenges were explored. Consequently, in accordance with the study objectives, the following research questions were formulated:

RQ1: To what extent are Iranian and Iraqi TEFL university professors AI-literate?

RQ2: To what extent are Iranian and Iraqi non-TEFL university professors AI-literate?

RQ3: Are there any differences between Iranian and Iraqi TEFL professors' AI-assistance literacy?

RQ4: Are there any differences between Iranian and Iraqi non-TEFL professors' AI-assistance literacy?

RQ5: What are the perceptions of Iranian and Iraqi TEFL and non-TEFL professors regarding AI-related objectives, needs and challenges?

METHOD

Design of the Study

Being a survey-type study by nature, the current study was conducted in two consecutive phases. In the first part, Iranian and Iraqi TEFL and non-TEFL professors' AI literacy was measured using an adapted AI literacy questionnaire on a 5-point Likert scale. In the second phase of the study, in an attempt to triangulate the data collection, a semi-structured interview was conducted.

Participants

The participants of the current study comprised 120 Iranian and Iraqi university professors. The participants were from both genders, and their age range and educational background were quite diverse. It's also worth noting that one-sixth of the participants (20 professors) volunteered to take part in the interview phase. The sampling method used in the current investigation was based on availability and convenience. In terms of language background, the Iranian participants had Persian, Kurdish or Turkish as their mother tongues. However, Iraqi participants' first languages were Arabic or Kurdish. The professors taking part in the study came from TEFL and non-TEFL disciplines, with the second group being composed of those majoring in hard sciences.

Instruments

As mentioned previously, the researchers in the current study relied on questionnaire and interview analysis as the main means of data collection. At the outset of research, to cater for ethicality concerns, all the participants were informed of the study objectives, and reminded of anonymity and confidentiality conditions, ensuring that the collected data would be used only for research purposes, and wouldn't be revealed to any third parties. In so doing, informed consent was also obtained from all the participants prior to the administration of the instruments. To ease the data collection procedure and collect the data in a cogent way, the study questionnaire was prepared in Google Forms, and then the link was shared with the participants in social media, mainly in telegram and WhatsApp.

The questionnaire utilized for the study was an adapted version of AI literacy scale developed based on the previous investigations by Tamori et al. (2022) and Yurt and Kaşaracı (2024). The utilized AI literacy inventory fell on a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). It must also be noted that the questionnaire was composed of 10 items, tapping into the participants' perceptions of AI. To ensure the reliability of the questionnaire, piloting was performed as a result of which, an acceptable index of Cronbach's Alpha was calculated for the scale ($r = .81$).

Moreover, a semi-structured interview (comprising three questions) was also prepared following in the footsteps of the previous researchers working in this area, and to ensure the validity of the interview protocol, some experts from the field were consulted, and their revisions and amendments were noted in finalizing the interview questions (one of the major revisions applied was related to reducing the number of interview question from four to three after further screening and receiving expert view). To facilitate the process of data collection, the interviews were all recorded to be analyzed later.

Procedure

It must be mentioned that the current study was a part of a large-scale research which was conducted over a one-year time span. As mentioned earlier, the participants were briefed regarding the study purposes at the outset of research. Furthermore, they were ensured of observing the conditions for anonymity, confidentiality, and voluntary participation. In addition, informed consent was obtained from all the participants in an attempt to follow research ethics. Successive to these initial steps, for the ease and uniformity of data collection, the AI questionnaire was prepared in Google Forms and its link was later shared with the participants. The questionnaire used in the study also had a demographic section at the beginning eliciting information concerning the participants' gender, age, and academic/educational background. As uttered before, the questionnaire was adapted from the scales developed by Tamori et al. (2022) and Yurt and Kaşarcı (2024). It's also worth reiterating that the questionnaire employed in the current study followed a 5-point Likert scale, and contained 30 items. After ensuring the reliability of the scale, its link was shared with the participants via social media, i.e. telegram and WhatsApp. The gathered data were then screened to determine the frequencies and percentages of responses for each questionnaire item, and measure their AI literacy. In the follow-up phase of the study, semi-structured interviews were conducted with those who had volunteered for this section of the research at hand. In this process, the participants' perceptions regarding the use of AI were recoded to be analyzed later. These responses were then transcribed and the main themes were extracted.

Data Analysis

To analyze research questions one to four, the researchers made use of the data gathered via questionnaire administration, and after checking the frequencies of responses provided for each item on the questionnaire, reported the percentages germane to each statement. Next, drawing on the mean scores obtained for the responses and the frequencies and percentages, conclusions were made regarding participants' overall responses to each statement on the scale. In regard to research question five, however, the interview data was consulted. However, for analyzing the interview data, after transcribing the data, the main themes arising from the participants' responses were extracted and reported accordingly.

RESULTS

As mentioned in the previous section, the analysis of data was done in two separate quantitative and qualitative phases. For the first four research questions, the researchers analyzed the questionnaire data, and based on the frequencies and percentages for each item on the questionnaire prepared a report for the results obtained for each question. In the second phase, however, which mainly relied on the qualitative data gathered through interviews, the participants' responses were transcribed and the main themes were extracted. This is what the researchers performed for research question five. It must be noted that inductive procedure of theme analysis was opted for, and bottom-up coding (e.g., Bingham & Witkowsky, 2022) was followed. Also, to ensure the reliability of coding procedure, two coders were involved in the process. In what follows, initially the quantitative findings are reported, and then the researchers present the results of qualitative analysis.

Quantitative Findings

Findings Obtained for Research Question One

The first research question of the study explored Iranian and Iraqi TEFL university professors' AI literacy. In what follows, initially the responses provided by Iranian TEFL professors are explicated. Table 1 illustrates Iranian TEFL professors' AI literacy profile.

Table 1 *Iranian TEFL Professors' AI Literacy Profile*

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. I can learn the skills that enable the effective use of artificial intelligence applications.	20%	43.3%	26.7%	6.7%	3.3%
2. My general knowledge about different AI tools is more than sufficient compared to many.	13.3%	40%	20%	16.7%	10%
3. I am better than most of my peers in effectively using artificial intelligence applications.	20%	36.7%	26.7%	13.3%	3.3%
4. My potential to effectively use artificial intelligence applications surpasses many people in my surroundings.	20%	36.7%	30%	10%	3.3%

5. Following developments in artificial intelligence is an interesting activity for me.	16.7%	46.7%	26.6%	6.7%	3.3%
6. Developing my skills in using artificial intelligence is a delightful learning process for me.	16.7%	43.3%	30%	6.7%	3.3%
7. Investing time and effort to learn artificial intelligence applications is worthwhile for me.	10%	50%	20%	13.3%	6.7%
8. Learning artificial intelligence applications is an easy task for me.	10%	13.3%	23.3%	33.4%	23.3%
9. I am inclined to sacrifice time from other activities to learn artificial intelligence applications.	33.3%	36.6%	6.7%	16.7%	6.7%
10. I am not hesitant to invest a considerable amount of time and effort to enhance my skills related to artificial intelligence.	36.7%	40%	13.3%	6.7%	3.3%

The first item on the questionnaire dealt with gaining the skills that enable the effective use of artificial intelligence applications. As is seen in Table 1, out of the entire number of respondents (TEFL professors at the academic context) which totaled 30, 6 members (20%) strongly agreed, 13 (43.3%) agreed, 8 (26.7%) were undecided, 2 (6.7%) disagreed, and 1 (3.3%) strongly disagreed. If we calculate the sum of percentages for strongly agree and agree, 63.3 percent of the Iranian professors have revealed their agreement with this aspect of AI literacy. The second item checked for the participants' familiarity with different AI tools. In response to this item, 4 participants (13.3%) chose strongly agree, 12 (40%) opted for agree, 6 (20%) were undecided, 5 (16.7%) selected disagree, and 3 (10%) picked out strongly disagree. Hence, a total of 16 participants (53.3%) were of a positive view toward this questionnaire item. The third questionnaire item monitored the participants' self-perceived familiarity with and use of AI-assistance tools. As the results indicated, 6 respondents (20%) strongly agreed, 11 (36.7%) agreed, 8 (26.7%) were undecided, 4 (13.3%) disagreed, and 1 (3.3%) strongly disagreed. Thus, the sum of responses in favor of this item totaled 17 (56.7%). The fourth item inquired the participants' potential for effectively using AI applications. In this regard, 6 professors (20%) selected strongly agree, 11 (36.7 percent) chose agree, 9 (30%) were undecided, 3 (10%) opted for disagree, and 1 (3.3%) went for strongly disagree. Again, the majority of the participants 17 (56.7%) were of a positive view in this regard. The fifth item on AI literacy scale was relevant to the respondents' interest in following developments in the field of AI. In this regard, 5 participants (16.7%) revealed their strong agreement, 14 (46.7%) expressed their agreement, 8 (26.6%) felt undecided, 2 (6.7%) showed their lack of agreement, and 1 (3.3%) disclosed their strong disagreement. Thus, the majority of participants (21 members, equaling 63.4 percent) voiced their positive attitudes toward this aspect of AI literacy. The sixth statement on the questionnaire inquired the extent to which developing skills in using AI proved to be a delightful learning process for the respondents. In response to this item, 5 participants (16.7%) strongly agreed, 13 (43.3%) agreed, 9 (30%) were undecided, 2 (6.7%) disagreed, and only 1 (3.3%) strongly disagreed. Hence, as is seen, an outright majority (18 participants equaling 60 percent) opted for strongly agree and agree. The seventh item explored the extent to which investing time and effort for learning AI was judged as a worthwhile activity by the participants. In response to this item, 3 participants (10%) strongly agreed, 15 (50%) agreed, 6 (20%) were undecided, 4 (13.3%) disagreed, and 2 (6.7%) strongly disagreed. Thus, a total of 18 participants (60%) opted for strongly agree and agree, showing that the level of self-perceived AI literacy concerning this item was also high. The eighth item probed the self-perceived ease of learning about AI applications from participants' perspective. Unlike the other items which revealed high agreement rates, surprisingly for this item only 3 (10%) opted for strongly agree, and 4 (13.3%) went for agree. In addition, 7 (23.3%) were undecided, 10 (33.4%) selected disagree and 7 (23.3%) chose strongly disagree. The ninth item on the questionnaire checked for the participants' inclination to sacrifice time from other activities to learn about AI applications. In line with the findings, 10 professors (33.3%) strongly agreed, 11 (36.6%) agreed, 2 (6.7 percent) were undecided, 5 (16.7%) disagreed, and 2 (6.7%) strongly disagreed. In sum, 21 participants (69.9%) agreed with this item by choosing either strongly agree or agree. Finally, the tenth item explored to what degree the participants didn't feel hesitant to invest a considerable amount of time and effort to enhance their AI-related skills. Based on the findings, 11 respondents (36.7%) strongly agreed, 12 (40%) agreed, 4 (13.3%) were undecided, 2 (6.7%) disagreed, and only 1 (3.3%) strongly disagreed. This means that the majority of participants (23 out of 30, totaling 76.7 percent of the participants) announced their agreement or strong agreement for this facet of AI literacy. The analysis of results for this research question in line

with the findings obtained for the ten questionnaire items measuring the degree of AI literacy in Iranian TEFL professors points toward a high degree of AI literacy among the respondents. Table 2 depicts Iraqi TEFL professors' AI literacy profile.

Table 2 *Iraqi TEFL Professors' AI Literacy Profile*

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Item 1	33.4%	40%	13.3%	10%	3.3%
Item 2	36.7%	40%	13.3%	6.7%	3.3%
Item 3	33.4%	30%	16.6%	10%	10%
Item 4	36.7%	33.3%	16.7%	10%	3.3%
Item 5	20%	40%	26.7%	10%	3.3%
Item 6	16.7%	36.7%	23.3%	13.3%	10%
Item 7	30%	30%	23.3%	6.7%	10%
Item 8	30%	33.3%	20%	10%	6.7%
Item 9	10%	46.7%	20%	13.3%	10%
Item 10	26.6%	30%	20%	16.7%	6.7%

In line with what is listed in Table 2, as regards Iraqi TEFL university professors' AI literacy, in response to the first item, out of the total number (30 Iraqi TEFL university professors), 10 participants (33.4%) strongly agreed, 12 (40 percent) agreed, 4 (13.3%) were undecided, 3 (10%) disagreed, and 1 (3.3%) strongly disagreed. If we compute the sum of percentages for strongly agree and agree, 73.4 percent of Iraqi professors have revealed their agreement with this item on AI literacy scale. Also, in response to the second item, 11 participants (36.7%) chose strongly agree, 12 (40%) opted for agree, 4 (13.3%) were undecided, 2 (6.7%) selected disagree, and only 1 (3.3%) picked out strongly disagree. Hence, a total of 23 participants (76.7%) were of a positive view toward this questionnaire item. As the results for the third item indicated, 10 respondents (33.4%) strongly agreed, 9 (30%) agreed, 5 (16.6%) were undecided, 3 (10%) disagreed, and 3 (10%) strongly disagreed. Thus, the sum of responses in favor of this item totaled 19 (63.4%). In regard to the fourth item, 11 professors (36.7%) selected strongly agree, 10 (33.3%) chose agree, 5 (16.7%) were undecided, 3 (10%) opted for disagree, and 1 (3.3%) went for strongly disagree. Once more, the majority of the participants, 21 (70%), were of a positive view in this regard. As regards the fifth item, 6 participants (20%) revealed their strong agreement, 12 (40%) expressed their agreement, 8 (26.7%) felt undecided, 3 (10%) showed their lack of agreement, and 1 (3.3%) disclosed their strong disagreement. Thus, the majority of participants (18 members, equaling 60 percent) voiced their positive attitudes toward this aspect of AI literacy. In response to the sixth item, 5 participants (16.7%) strongly agreed, 11 (36.7%) agreed, 7 (23.3%) were undecided, 4 (13.3%) disagreed, and only 3 (10%) strongly disagreed. Hence, as is witnessed, comparatively more respondents (16 participants equaling 53.4 percent) opted for strongly agree and agree. As for the seventh item, 9 participants (30%) strongly agreed, 9 (30%) agreed, 7 (23.3%) were undecided, 2 (6.7%) disagreed, and 3 (10%) strongly disagreed. Thus, a total of 18 participants (60 percent) opted for strongly agree and agree, showing that the level of self-perceived AI literacy concerning this item was very high among Iraqi EFL professors. Based on the responses for the eighth item, 9 participants (30%) opted for strongly agree, and 10 (33.3%) went for agree. In addition, 6 (20%) were undecided, 3 (10%) selected disagree and 2 (6.7%) chose strongly disagree. Again, an outright majority, 19 respondents (63.3%), chose strongly agree and agree. In accordance with the findings obtained for item nine, 3 professors (10%) strongly agreed, 14 (46.7%) agreed, 6 (20%) were undecided, 4 (13.3%) disagreed, and 3 (10%) strongly disagreed. In total, 17 participants (56.7%) agreed with this item by choosing either strongly agree or agree. Finally, as the findings for the last item divulged, 8 respondents (26.6%) strongly agreed, 9 (30%) agreed, 6 (20%) were undecided, 5 (16.7%) disagreed, and only 2 (6.7%) strongly disagreed. This means that the majority of participants (17 out of 30, totaling 56.6 percent of the participants) revealed their agreement or strong agreement for this facet of AI literacy. The analysis of results for this research question in accordance with the findings obtained for the ten questionnaire items measuring the degree of AI literacy in Iraqi TEFL professors indicates a high degree of AI literacy among the respondents.

Findings Obtained for Research Question Two

The second research question probed Iranian and Iraqi non-TEFL university professors' AI literacy. In this section, first the responses provided by Iranian non-TEFL professors are expounded (see Table 3).

Table 3 *Iranian Non-TEFL Professors' AI Literacy Profile*

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Item 1	16.7%	40%	26.7%	10%	6.6%
Item 2	20%	36.7%	23.3%	16.7%	3.3%
Item 3	23.3%	30%	36.7%	3.3%	6.7%
Item 4	20%	33.3%	16.7%	13.3%	16.7%
Item 5	13.3%	43.3%	26.7%	6.7%	10%
Item 6	16.7%	36.7%	26.7%	6.6%	13.3%
Item 7	10%	46.7%	20%	10%	13.3%
Item 8	13.3%	40%	16.7%	20%	10%
Item 9	20%	33.4%	23.3%	13.3%	10%
Item 10	13.3%	36.7%	26.7%	16.7%	6.6%

As is witnessed in Table 3, in response to the first questionnaire item, out of the entire number of respondents (30 non-TEFL university professors), 5 members (16.7%) strongly agreed, 12 (40%) agreed, 8 (26.7%) were undecided, 3 (10%) disagreed, and 2 (6.6%) strongly disagreed. If we calculate the sum of percentages for strongly agree and agree, 56.7 percent of the Iranian non-TEFL professors have revealed their agreement with this aspect of AI literacy. In response to the second item, 6 participants (20%) chose strongly agree, 11 (36.7%) opted for agree, 7 (23.3%) were undecided, 5 (16.7%) selected disagree, and only 1 (3.3%) picked out strongly disagree. Hence, a total of 17 participants (56.7%) were of a positive view toward this questionnaire item. As the results for the third questionnaire item indicated, 7 respondents (23.3%) strongly agreed, 9 (30%) agreed, 11 (36.7%) were undecided, 1 (3.3%) disagreed, and 2 (6.7%) strongly disagreed. Thus, the sum of responses in favor of this item totaled 16 (53.3%). As regards the fourth questionnaire item, 6 professors (20%) selected strongly agree, 10 (33.3%) chose agree, 5 (16.7%) were undecided, 4 (13.3%) opted for disagree, and 5 (16.7%) went for strongly disagree. Again, comparatively more participants (16, 53.3%) were of a positive view in this regard. In regard to the fifth item, 4 participants (13.3%) revealed their strong agreement, 13 (43.3%) expressed their agreement, 8 (26.7%) felt undecided, 2 (6.7%) showed their lack of agreement, and 3 (10%) disclosed their strong disagreement. Thus, the majority of participants (17 members, equaling 56.6 percent) voiced their positive attitudes toward this aspect of AI literacy. In response to item 6 on the questionnaire, 5 participants (16.7%) strongly agreed, 11 (36.7%) agreed, 8 (26.7%) were undecided, 2 (6.6%) disagreed, and 4 (13.3%) strongly disagreed. Hence, as is seen, more participants (16 equaling 53.4 percent) opted for strongly agree and agree. As to item 7 on the questionnaire, 3 participants (10%) strongly agreed, 14 (46.7%) agreed, 6 (20%) were undecided, 3 (10%) disagreed, and 4 (13.3%) strongly disagreed. Thus, a total of 17 participants (56.7%) opted for strongly agree and agree, showing that the level of self-perceived AI literacy concerning this item was also high. As for item 8 on the questionnaire, 4 (13.3%) opted for strongly agree, and 12 (40%) went for agree. In addition, 5 (16.7%) were undecided, 6 (20%) selected disagree and 3 (10%) chose strongly disagree. Thus, in total, 16 participants (53.3%) revealed their agreement with this item. In line with the findings for the ninth questionnaire item, 6 professors (20%) strongly agreed, 10 (33.4%) agreed, 7 (23.3%) were undecided, 4 (13.3%) disagreed, and 3 (10%) strongly disagreed. In total, 16 participants (53.4%) agreed with this item by choosing either strongly agree or agree. Finally, based on the responses given to the tenth item, 4 respondents (13.3%) strongly agreed, 11 (36.7%) agreed, 8 (26.7%) were undecided, 5 (16.7%) disagreed, and only 2 (6.6%) strongly disagreed. This means that half of the participants (15 out of 30, totaling 50 percent) revealed their agreement or strong agreement for this facet of AI literacy. The analysis of results in line with the findings obtained for the ten questionnaire items measuring the degree of AI literacy among Iranian non-TEFL university professors discloses a comparatively high degree of AI literacy (slightly above average) among the respondents. Table 4 presents Iraqi non-TEFL professors' AI literacy profile.

Table 4 *Iraqi Non-TEFL Professors' AI Literacy Profile*

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Item 1	20%	40%	10%	23.3%	6.7%
Item 2	23.3%	36.7%	13.3%	20%	6.7%
Item 3	16.7%	36.7%	23.3%	10%	13.3%

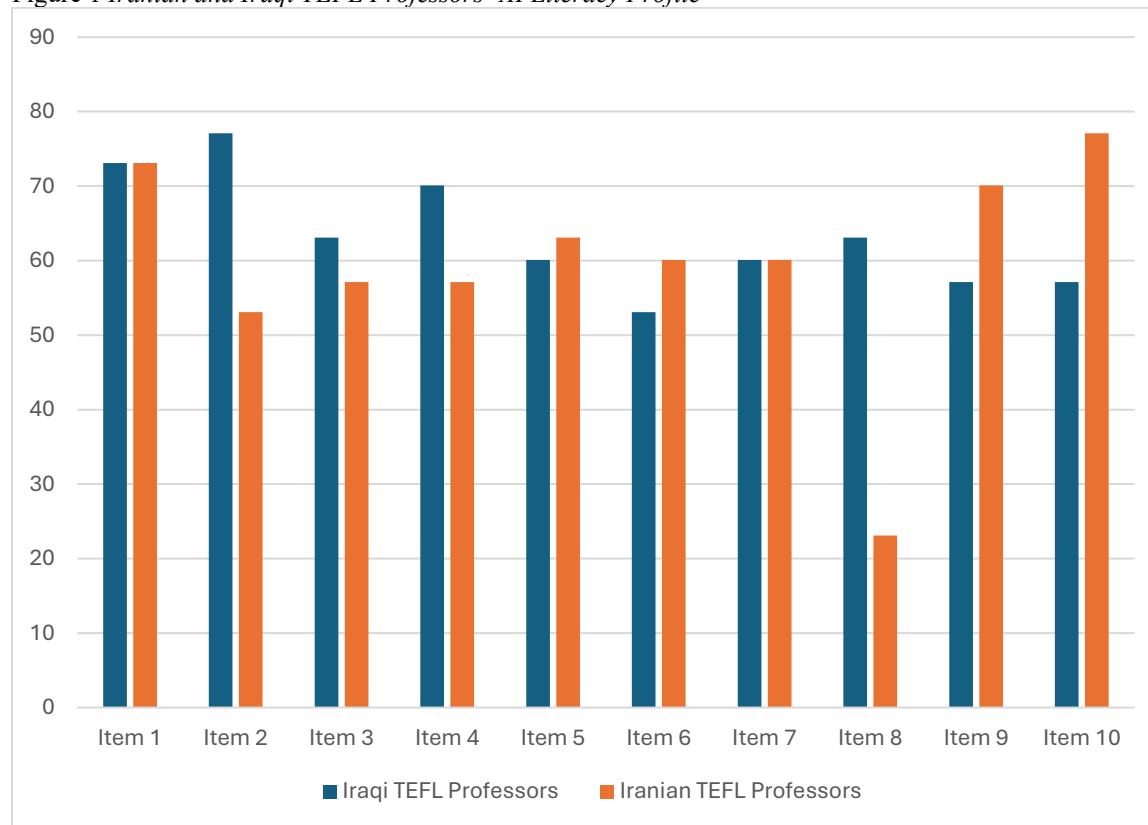
Item 4	36.7%	20%	20%	13.3%	10%
Item 5	20%	33.3%	13.3%	16.7%	16.7%
Item 6	23.3%	36.7%	26.7%	10%	3.3%
Item 7	33.3%	30%	16.7%	10%	10%
Item 8	30%	23.3%	23.3%	6.7%	16.7%
Item 9	33.3%	33.3%	20%	6.7%	6.7%
Item 10	30%	33.3%	13.3%	16.7%	6.7%

As illustrated in Table 4, concerning Iraqi non-TEFL university professors' AI literacy, in response to the first item, out of the total number (30 Iraqi non-TEFL professors), 6 participants (20%) strongly agreed, 12 (40%) agreed, 3 (10%) were undecided, 7 (23.3%) disagreed, and 2 (6.7%) strongly disagreed. If we compute the sum of percentages for strongly agree and agree, 18 participants (60%) of Iraqi non-TEFL professors have revealed their agreement with this item on AI literacy scale. In response to the second item, 7 participants (23.3%) chose strongly agree, 11 (36.7%) opted for agree, 4 (13.3%) were undecided, 6 (20%) selected disagree, and 2 (6.7%) picked out strongly disagree. Hence, a total of 18 participants (60%) were of a positive view toward this questionnaire item. Also, as the results for item 3 indicated, 5 respondents (16.7%) strongly agreed, 11 (36.7%) agreed, 7 (23.3%) were undecided, 3 (10%) disagreed, and 4 (13.3%) strongly disagreed. Thus, the sum of responses in favor of this item totaled 16 (53.4%). As to the fourth item on the questionnaire, the findings depicted that 11 professors (36.7%) selected strongly agree, 6 (20%) chose agree, 6 (20 percent) were undecided, 4 (13.3%) opted for disagree, and 3 (10%) went for strongly disagree. Hence, 17 participants (56.7%), were of a positive view in this regard. With regard to the fifth questionnaire item, 6 participants (20%) revealed their strong agreement, 10 (33.3%) expressed their agreement, 4 (13.3%) felt undecided, 5 (16.7%) showed their lack of agreement, and 5 (16.7%) disclosed their strong disagreement. Thus, 16 respondents, equaling 53.3 percent, voiced their positive attitudes toward this aspect of AI literacy. Furthermore, as regards item 6 on the questionnaire, 7 participants (23.3%) strongly agreed, 11 (36.7%) agreed, 8 (26.7%) were undecided, 3 (10%) disagreed, and only 1 (3.3%) strongly disagreed. Hence, as is witnessed, comparatively more respondents (18 participants equaling 60 percent) opted for strongly agree and agree. With respect to the seventh item, 10 participants (33.3%) strongly agreed, 9 (30 percent) agreed, 5 (16.7%) were undecided, 3 (10%) disagreed, and 3 (10%) strongly disagreed. Thus, a total of 19 participants (63.3%) opted for strongly agree and agree, showing that many Iraqi EFL professors appraised the time investment on learning AI a worthwhile activity. Based on the responses provided for the eighth item, 9 participants (30%) opted for strongly agree, and 7 (23.3%) went for agree. In addition, 7 (23.3%) were undecided, 2 (6.7%) selected disagree and 5 (16.7%) chose strongly disagree. Therefore, 16 individuals (53.3%) chose strongly agree and agree in regard to this item. Additionally, in accordance with the findings obtained for item 9 on the questionnaire, 10 professors (33.3%) strongly agreed, 10 (33.3%) agreed, 6 (20%) were undecided, 2 (6.7%) disagreed, and 2 (6.7%) strongly disagreed. In sum, 20 participants (66.6%) agreed with this item by choosing either strongly agree or agree. Finally, as the findings for the last questionnaire item divulged, 9 respondents (30%) strongly agreed, 10 (33.3%) agreed, 4 (13.3%) were undecided, 5 (16.7%) disagreed, and only 2 (6.7%) strongly disagreed. This means that the majority of participants (19 out of 30, totaling 63.3 percent of the participants) announced their agreement or strong agreement for this facet of AI literacy. The analysis of results for this research question in accordance with the findings obtained for the ten questionnaire items measuring the degree of AI literacy in Iraqi non-TEFL university professors indicates a comparatively high degree of AI literacy among the respondents.

Findings Obtained for Research Question Three

The third research question in the study explored the possible differences between Iranian and Iraqi TEFL professors' AI-assistance literacy. Figure 1 shows the percentages obtained for Iranian and Iraqi professors as regards the degree of AI literacy from different perspectives.

Figure 1 *Iranian and Iraqi TEFL Professors' AI Literacy Profile*

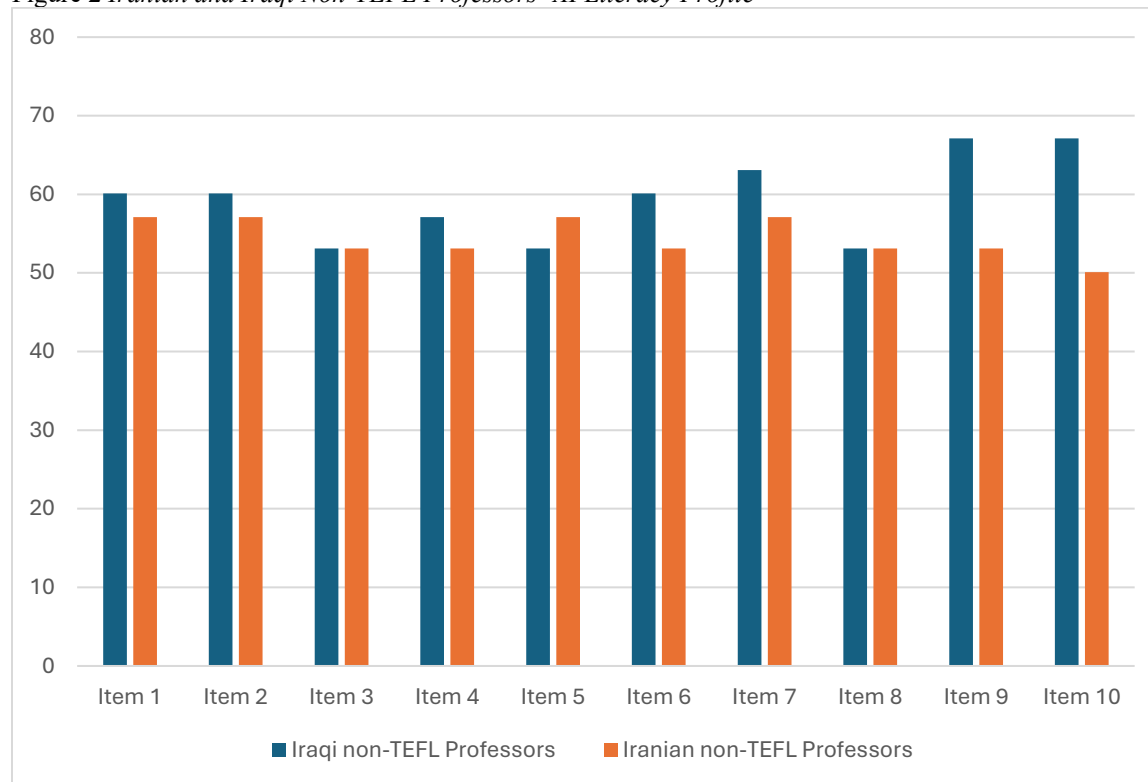


As Figure 1 illustrates, regarding the first item on the questionnaire, both Iranian and Iraqi TEFL professors reveal a tantamount degree of adeptness for the effective use of artificial intelligence applications. However, in regard to the second item on the questionnaire, Iraqi TEFL professors are found to surpass their Iranian counterparts as 76.7 percent of Iraqi professors have perceived their knowledge of AI tools to be at a high level, whereas only 53.3 of Iranian professors have disclosed their agreement with this aspect of AI literacy. This condition also holds true for the third statement on the questionnaire, based on which more Iraqi professors (63.4%) compared to their Iranian counterparts (56.7%) have judged their familiarity with the use of AI applications much better than their co-workers. The same is the case for item 4 on the questionnaire in response to which more Iraqi TEFL professors (70%) than Iranians (56.7%) have rated their potential for effective use of AI applications to be better than the others. Nevertheless, as regards the degree of interest in pursuing advancements in AI technology (item 5) Iranian professors hold the upper hand with 63.4 percent of them agreeing with the statement compared to Iraqi respondents whose percentage amounts to 60. The higher percentage of Iranian professors (60%) as opposed to Iraqi participants (53.4%) is also observable concerning the sixth item which indicates the higher penchant on the part of Iranian professors to upgrade their AI implementation skills. Moreover, as it comes to the amount of value given to expanding the knowledge of AI applications (item 7) Iranian and Iraqi professors enjoy an equal status with both groups reaching 60 percent. As to the next item on AI literacy questionnaire which inquires the ease of learning about AI applications, Iraqi professors have overrated their capability in this regard with 63.3 percent of agreement, while Iranian respondents have a much lower position in this regard (only 23.3%). In spite of the much higher status of Iraqi professors on this item, however, it is thought that Iranian participants have been more realistic in appraising their AI learning ability. The comparison of results for item 9 also depicts that Iranian TEFL professors have voiced a greater proclivity (70%) than Iraqi participants (56.7%) for devoting their time to learning about AI applications. Finally, it is Iranian professors (76.7%) who outperform their Iraqi counterparts (56.6%) concerning their readiness for investing on AI skill enhancement.

Findings Obtained for Research Question Four

The fourth research question investigated the possible differences between Iranian and Iraqi non-TEFL professors' AI-assistance literacy. Figure 2 portrays the percentages obtained for Iranian and Iraqi professors as regards the degree of AI literacy from different perspectives.

Figure 2 *Iranian and Iraqi Non-TEFL Professors' AI Literacy Profile*



Drawing on the data reported in Figure 2, we can conclude that Iraqi non-TEFL professors (60%) are characterized by a higher degree of deftness than their Iranian counterparts (56.7%) for the effective use of artificial intelligence applications. Also, as regards the second item on the questionnaire, again Iraqi non-TEFL professors are found to surpass Iranian respondents as 60 percent of Iraqi professors have perceived their knowledge of AI tools to be at a high level, whereas 56.7 of Iranian participants have disclosed their agreement with this aspect of AI literacy. Nevertheless, concerning the third statement on the questionnaire, Iranian and Iraqi professors have parallelly judged their familiarity with the use of AI applications with the same percentage. Moreover, in response to item 4 on the questionnaire, more Iraqi TEFL professors (56.7%) than Iranians (53.3%) have rated their potential for effective use of AI applications to be better than the others. Next, as regards the degree of interest in pursuing advancements in AI technology (item 5) Iranian professors hold the upper hand with 56.6 percent of them agreeing with the statement compared to Iraqi respondents whose percentage amounts to 53.3. In contrast, the higher percentage of Iraqi professors (60%) as opposed to Iranian participants (53.4%) is observable concerning the sixth item which indicates the higher predisposition on the part of Iraqi professors to upgrade their AI implementation skills. Likewise, as it comes to the amount of value given to expanding the knowledge of AI applications (item 7) Iraqi professors once more revealed a higher degree of agreement (63.3%) vis-à-vis the Iranian respondents (56.7%). As to the next item on AI literacy questionnaire which inquires the ease of learning about AI applications, Iranian and Iraqi professors enjoy an equal status both reporting 53.3 percent of agreement. Nonetheless, the comparison of results for item 9 depicts that Iraqi TEFL professors have voiced a greater inclination (66.6%) than Iranian participants (53.4%) for devoting their time to learning about AI applications. Finally, it is again Iraqi professors (66.6%) who have outperformed their Iranian counterparts (50%) concerning their readiness for investing on AI skill enhancement.

Findings Obtained for Research Question Five

As stated earlier, there were three interview questions in the current study. The first question sought to explore the degree of participants' familiarity with AI tools and the purposes for which they used them. In response to this interview question, professors referred to a wide variety of purposes for which they employed AI tools, among which mention can be made of research-related issues, such as finding and refining research topics, getting access to paper summaries and article highlights, and finding useful references relevant to the queried topics, as well as feedback provision role of AI. It's worth noting that non-TEFL professors referred to these uses of AI tools with a higher frequency compared to TEFL professors. This is possibly due to the fact that TEFL professors had less need for such

queries thanks to their better command of English. As regards the uses of AI tools, one of the professors (non-TEFL respondent) said:

Extract 1

AI assistant tools help me in different ways. For example, when I'm unsure of the suitability of my research topics, I try to use AI. It can also help me refine my topics.

Another professor (a TEFL instructor) maintained that he mostly made use of AI tools to come up with novel research topics and help his students make up their mind about proper research topics. His statement is presented below:

Extract 2

I think the best thing I can use AI for is looking for up-to-date research areas, and introduce new research topics to my students. This use of AI is highly important to me.

The second most important utility of AI tools from the participants' perspective was their effectiveness as a proper source of feedback for students. Most participants were of the view that this benefit of AI tools was more prominent especially in large classrooms with lots of students. In this regard one of the interviewees (a TEFL professor) stated:

Extract 3

AI can help instructors a lot with providing proper feedback for learners. This can be particularly beneficial for crowded classes, and when the students are unsure about the correctness of the language they use.

The second interview question inquired the participants' views about the needs of university professors as regards AI technology. In this respect, most of the participants highlighted the dire need for more training sessions and workshops for further familiarity with AI tools and their functions and applications. Most of the respondents were of the view that such training will help them go through further professional development in terms of AI-integrated instruction. For instance, one of the non-TEFL professors put her view in the following way:

Extract 4

I do believe that AI training will lead to better professional development among the instructors. AI training and workshops can contribute to better teaching, planning and assessment.

Another interviewee (a TEFL professor) referred to the need for training in the following manner:

Extract 5

Universities must offer more AI training and workshops to equip their staff with better means of instruction. Instructors who are more familiar with AI tools and applications can do a better job in teaching properly and creating more student involvement.

Moreover, some of the respondents surmised that proper training must be ongoing and more focused on the specific needs of instructors in different disciplines. As a case in point, one the non-TEFL professors averred:

Extract 6

It is needed to have workshops about AI on a regular basis. These workshops must address the needs of instructors in different fields.

Another participant (a TEFL instructor) put his standpoint in the following way:

Extract 7

What we need as instructors is being updated on current technologies like AI, and this shouldn't be a one-shot experience. We need to be upgraded all the time. What we also need is receiving feedback about our AI-related performance in collaborative sessions.

In regard to differentiated AI training tailored to the varied needs of professors in different majors, another participant (a non-TEFL professor) uttered:

Extract 8

To me, universities must provide further AI-related guidelines and training in a more structured and technical way, because as you know, the needs of instructors and even learners are diverse in different fields of study, so their AI uses are also different.

Finally, the third interview question queried the challenges and concerns the professors had faced or heard about in the process of AI use. In response to this question, the respondents referred to a number of primary issues, including lack of fair and equitable access to AI tools (a challenge which was mostly voiced by Iranian instructors resulting

from filtering and sanction issues), the danger of academically dishonest behavior and misuse of AI. As regards the inequitable access to AI tools, one of the Iranian non-TEFL professors raised her concern in the following manner:

Extract 9

Actually, it's not the case that I don't prefer the use of AI tools. The main problem is that we don't have fair and easy access to AI applications in our country due to sanctions and filtering. So we can't properly use the strong versions of AI and have to use the second-hand or impractical versions.

Also, concerning the improper and irresponsible use of AI tools for research purposes, one of the respondents (a TEFL instructor) expressed his attitude in the following manner:

Extract 10

In my viewpoint, the greatest risk of using AI tools is the unethical use of AI, especially in writing academic papers. These days we can't be sure what percentage of research works are done in a genuine way, and this is a critical challenge for the research community.

Another participant (a non-TEFL professor) referred to the misuse of AI tools by the students to complete their projects, submit their proposals or write up their theses:

Extract 11

As a result of the widespread use of AI, we can't trust the students' work. They mostly commit plagiarism and the projects they give us, the proposals they write or the theses they complete are accomplished with the help of AI tools, and we have to doubt the originality of their work.

All in all, as can be concluded based on the interview responses reviewed in this section, while the professors were of the opinion that AI tools are essential and appropriate AI training is highly required, they raised serious concerns about the irresponsible and unethical application of AI tools.

DISCUSSION

The current study strove to find the degree of AI literacy among Iranian and Iraqi TEFL and non-TEFL university professors. In so doing, the purposes for which AI was utilized, as well as their needs, challenges and concerns were probed in the qualitative phase. As the findings for TEFL professors (research questions one and three) indicated, Iraqi professors generally overrated their familiarity with AI tools and perceived their AI using skill to be much higher than their Iranian counterparts. Nevertheless, in response to the items related to the degree of interest in gaining further familiarity with AI tools, Iranian professors surpassed the Iraqi respondents. In other words, while Iraqi professors mostly overstated their ability in using AI, Iranian professors seemed to be more realistic in their appraisal of their AI skill, but demonstrated elevated appeal in brushing up their AI-related knowledge. Furthermore, the analysis of data for non-TEFL professors (research questions two and four) pointed toward partly similar findings. The only difference observed is the fact that Iraqi non-TEFL professors overestimated both their knowledge of and interest in AI. This can be again interpreted as the more realistic judgment of Iranian non-TEFL participants regarding their AI familiarity and appeal.

The positive perceptions of AI on the part of Iranian and Iraqi professors in both TEFL and non-TEFL fields as one of the main findings of the current study aligns with Otermans et al. (2025), who reported that positive attitudes toward AI can give way to higher degrees of AI familiarity and implementation. This finding also resonates with the one obtained by Torun and Özer Şanal (2025), where they claimed positive impressions of academics of efficacy and use of AI tools. However, the finding of Ağca and Korkmaz (2025) was found to be in partial contrast with the present study finding, in that their study culminated in declaring a negative role for AI as a source of augmenting anxiety and declining creativity levels. Moreover, the positive perceptions of AI literacy on the part of professors (particularly Iraqi respondents) in the current study can be corroborated by the findings of Wang and Wang (2022) who declared a notable go-togetherness among positive AI perceptions, literacy and use.

The other finding obtained in the qualitative phase of the study was that the key purposes for which the professors used AI were mainly germane to research issues, like formulating research topics, accessing paper summaries and article highlights, and finding references associated with the research topics being investigated. The analysis of qualitative data also divulged the dire need felt by the respondents for being provided with systematic, focused and ongoing AI training. In compliance with this finding, a cohort of other researchers have also underscored the importance of AI training for professional development (e.g., Carolus et al., 2023; Kong et al., 2023; Laupichler et al., 2022; Pinski & Benlian, 2023). This finding falls on a par with Sadeghi and Pourbahram's (2023) contention that AI training is highly required to upgrade the individuals' knowledge concerning the proper use of AI tools. It is also consistent with the one reported in Torun and Özer Şanal's (2025) study. Akin to the current research, their

investigation which was also carried out in the academic context pointed toward the important role of AI training. Moreover, the current finding is in keeping with what Ağca and Korkmaz (2025) concluded. Their research further buttressed the fundamental role of AI-oriented training in helping the individuals feel more at ease and less anxious in using AI tools.

Furthermore, the current research demonstrated that the main AI-related challenges in the eyes of interviewed professors were unfair and unequal access to AI tools, the danger of academically dishonest behavior and misuse of AI. This finding gains support from a set of related probes (e.g., Sadeghi & Pourbahram, 2023; Vaezi et al. 2024; Zhao et al. 2022). For instance, Sadeghi and Pourbahram (2023) claimed that social injustice, particularly as regards AI use, can be alleviated through proper training. In addition, the finding is further consolidated by Vaezi et al.'s (2024) study, in which the online exams were seen as the main culprit giving rise to academic dishonesty. Likewise, in accordance with the current finding, the investigation performed by Zhao et al. (2022) emphasized the risk of cheating and academically dishonest behavior resulting from improper AI use. In sum, the current investigation came up with a number of prominent issues concerning AI familiarity, requirements, opportunities and challenges. It is hoped that the results obtained in the present study will pave the way for further probes into different perspectives of AI knowledge and use.

CONCLUSION

The researchers in the present study set out with the aim of determining the degree of AI literacy among Iranian and Iraqi TEFL and non-TEFL university professors. The findings revealed the high degree of AI literacy among the participants as well as their zeal for furthering their AI-related knowledge. Moreover, interesting findings were disclosed in relation to AI purposes, needs and challenges. The findings offer practical implications particularly for professors in the academic context (both TEFL and non-TEFL instructors) from a number of diverse vantage points. First and foremost, inspired by the results gained in the study, the professors will be further sensitized toward the dire need for brushing up their AI knowledge and familiarity. They might also benefit from the current findings by trying to attend AI-oriented workshops and training sessions. The university officials and policy makers will also gain fruitful insights from the findings, and organize more systematic and focused AI training sessions and workshops to keep up the AI-directed professional knowledge of their staff. The findings will also have proper ramifications for university students, and push them toward fostering their AI knowledge to use it in an appropriate and responsible way.

At this point, it must be admitted that like all the other studies that rely on questionnaire and interview data, the current research also suffered from a number of shortcomings. The first limitation of the study was the fairly low number of participants which might reduce the generalizability of the findings. Thus, future studies may choose a larger and a more representative sample to further corroborate the current findings. Secondly, the use of self-report measures in the current study might be regarded as the other limitation, meaning that the participants might have reported distorted or augmented reality in their responses. In view of this limitation, future researchers might utilize more data collection tools such as observation, narratives and more robust, performance-related tests to cater for triangulation and come up with more reliable findings as regards the participants' true AI literacy level. In addition, the use of participants only from hard sciences as the quintessential examples of non-TEFL professors, which was done due to availability and convenience issues, can be referred to as the other limitation of the present study. Hence, further research can include a variety of other majors to make more meticulous cross-disciplinary comparisons in relation to AI literacy. Altogether, though the current study was an attempt to open up the research horizons and bridge the gap in research on AI literacy, further research is certainly required to substantiate the findings and push forward the frontiers of knowledge in this domain.

REFERENCES

1. Ağca, R. K. & Korkmaz, O. (2025). Experimental perspective on artificial intelligence anxiety. *International Journal of Technology in Education*, 8(1), 22-44. <https://doi.org/10.46328/ijte.846>
2. Bannister, P., Santamaria-Urbiet, A., Alcalde-Peñalver, A. (2023). A Delphi study on generative artificial intelligence and English medium instruction assessment: Implications for social justice. *Iranian Journal of Language Teaching Research*, 11(3), 53-80. <https://doi.org/10.30466/ijltr.2023.121406>
3. Carolus, A., Koch, M., Straka, S., Latoschik, M. E., & Wienrich, C. (2023). MAILS—Meta AI Literacy Scale: Development and testing of an AI literacy questionnaire based on well-founded competency models and psychological change-and meta-competencies. <https://doi.org/10.48550/arXiv.2302.09319>
4. Chiu, T. K., Meng, H., Chai, C. S., King, I., Wong, S., & Yam, Y. (2021). Creation and evaluation of a pretertiary artificial intelligence (AI) curriculum. *IEEE Transactions on Education*, 65(1), 30–39. <https://doi.org/10.1109/TE.2021.3085878>

5. Cote, T., & Milliner, B. (2018). A survey of EFL teachers' digital literacy: A Report from a Japanese University. *Teaching English with Technology*, 18(4), 71-89.
6. Gökçearsan, S., Tosun, C., & Erdemir, Z. G. (2024). Benefits, challenges, and methods of Artificial Intelligence (AI) chatbots in education: A systematic literature review. *International Journal of Technology in Education*, 7(1), 19-39. <https://doi.org/10.46328/ijte.600>
7. Karaman, M. R., & Göksu, I. (2024). Are lesson plans created by ChatGPT more effective? An experimental study. *International Journal of Technology in Education*, 7(1), 107-127. <https://doi.org/10.46328/ijte.607>
8. Kong, S. C., Cheung, W. M. Y., & Zhang, G. (2023). Evaluating an artificial intelligence literacy programme for developing university students' conceptual understanding, literacy, empowerment and ethical awareness. *Educational Technology and Society*, 26(1), 16–30. <https://doi.org/10.1016/j.ijinf omgt.2021.102433>
9. Laupichler, M. C., Aster, A., & Schirch, J. (2022). Artificial intelligence literacy in higher and adult education: A scoping. *Computers & Education: Artificial Intelligence*, 3, 100101. <https://doi.org/10.1016/j.caeai.2022.100101>
10. Li, G., Zarei, M. A., Alibakhshi, G., & Labbafi, A. (2024). Teachers and educators' experiences and perceptions of artificial-powered interventions for autism groups. *BMC Psychology*, 12, 199. <https://doi.org/10.1186/s40359-024-01664-2>
11. Ng, D. T. K., Wu, W., Leung, J. K. L., Chiu, T. K. F., Chu, S. K. W. (2023). Design and validation of the AI literacy questionnaire: The affective, behavioural, cognitive and ethical approach. *British Journal of Educational Technology*, 55, 1082–1104. <https://doi.org/10.1111/bjet.13411>
12. Otermans, P.C.J., Roberts, C., & Baines, S. (2025). Unveiling AI perceptions: How student attitudes towards AI shape AI awareness, usage, and conceptions. *International Journal of Technology in Education*, 8(1), 88-103. <https://doi.org/10.46328/ijte.995>
13. Pinski, M., & Benlian, A. (2023). AI literacy-towards measuring human competency in artificial intelligence. <https://scholarspace.manoa.hawaii.edu/handle/10125/102649>
14. Rahmati, T., & Nushi, M. (2023). EFL teachers' knowledge, beliefs, and practices regarding fairness and justice in technology-enhanced classroom assessment: A duoethnography. *Iranian Journal of Language Teaching Research*, 11(3), 31-52. <https://doi.org/10.30466/ijltr.2023.121405>
15. Sadeghi, K., & Pourbahram, R. (2023). Social justice in technology-mediated second language education: A systematic review. *Iranian Journal of Language Teaching Research*, 11(3), 81-97. <https://doi.org/10.30466/ijltr.2023.121407>
16. Tamori, H., Yamashina, H., Mukai, M., Morii, Y., Suzuki, T., Ogasawara, K. (2022). Acceptance of the use of artificial intelligence in medicine among Japan's doctors and the public: A questionnaire survey. *JMIR Human Factors*, 9(1), e24680. <https://doi.org/10.2196/24680>
17. Torun, F., & Özer Şanal, S. (2025). The perspectives of academicians and students regarding the use of generative artificial intelligence in higher education. *International Journal of Technology in Education*, 8(1), 65-87. <https://doi.org/10.46328/ijte.883>
18. Vaezi, Sh., Vaezi, M., & Nami, F. (2024). Academic dishonesty out, use of resources in. *Computers and Education Open*, 6, 100193. <https://doi.org/10.1016/j.caeo.2024.100193>
19. Wang, Y., & Stockwell, G. (2023). Social justice and technology in second language education. *Iranian Journal of Language Teaching Research*, 11(3), 1-18. <https://doi.org/10.30466/ijltr.2023.121403>
20. Wang, Y. Y., & Wang, Y. S. (2022). Development and validation of an artificial intelligence anxiety scale: An initial application in predicting motivated learning behavior. *Interactive Learning Environments*, 30(4), 619-634. <https://doi.org/10.1080/10494820.2019.1674887>
21. Yurt, E. & Kasarci, I. (2024). A Questionnaire of Artificial Intelligence Use Motives: A contribution to investigating the connection between AI and motivation. *International Journal of Technology in Education*, 7(2), 308-325. <https://doi.org/10.46328/ijte.725>
22. Zhao, L., Mao, H., Compton, B. J., Peng, J., Fu, G., Fang, F., Heyman, G. D., & Lee, K. (2022). Academic dishonesty and its relations to peer cheating and culture: A meta-analysis of the perceived peer cheating effect. *Educational Research Review*, 36, 100455. <https://doi.org/10.1016/j.edurev.2022.100455>