

Teachers' Perspectives on the Challenges of Incorporating AI Chatbots into Writing Instruction for Arab EFL Learners

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Abstract

The current paper examines the Arab EFL teacher view on the application of AI-based chatbots as a method of aiding writing instruction. It explores pedagogy, didactic difficulties and ethics. The overall aim is to clarify the perception that teachers have of AI chatbots as a useful tool in the writing process and to find out to what degree these perceptions are reflected in instructional decision-making and classroom behaviors. A quantitative study was conducted using a structured questionnaire that was given to forty Arab EFL teachers, using a sequential explanatory mixed-method design. To elaborate and contextualize the survey results, qualitative enquiry was implemented through semi-structured interviews with twelve teachers. Findings have shown that educators tend to perceive AI chatbots as effective complementary instruments to generate ideas, provide linguistic support, and initial feedback. However, there were also major concerns related to the quality of AI-generated feedback, the tendency to overuse automatics by students, the problem of academic integrity, and the lack of uniform preparedness of institutions and technology infrastructure. The results also indicate that teachers use mediated instructional practices, such as guided scaffolding, staged instruction, AI literacy instruction, and verification-based writing activities to alleviate these issues. The current research highlights the fact that successful and conscientious implementation of AI in EFL writing classrooms is largely reliant on teacher mediation and not independent chatbots.

Keywords: AI chatbots, AI literacy, Arab EFL teachers, EFL writing, writing pedagogy

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Introduction

The current development of Egyptian artificial intelligence has transformed the English as a Foreign Language (EFL) writing-teaching process, as AI-controlled chatbots can now offer real-time feedback, language support, and tailored advice. As a result, these chatbots are increasingly used as a complement to teacher feedback in EFL classrooms. However, AI chatbots pose pedagogical and professional challenges, especially for instructors. Previous studies are rather critical of the validity and educational quality of AI-generated feedback, as well as of students' dependence on digital support. The problems raise concerns about the alignment of the curriculum, student autonomy, and the changing role of educators in the classrooms with AI support (Al-Azzawi et al., 2025; Ling and Jan, 2025). The Arab EFL settings also face challenges related to digital preparedness, technological infrastructure, and institutional policies. Although previous research has focused on student outcomes, teachers' experiences have received relatively low priority in AI implementation and academic integrity. To address this academic gap, the current research examines Arab EFL teachers' views on pedagogical, technical, and ethical concerns related to the use of AI chatbots in the writing process.

Empirical studies tended to resemble a one-sided approach, despite findings that AI chatbots may improve the writing abilities, motivation, and self-regulation of EFL learners. Modern studies are more focused on learning outcomes, usage rates, and comparisons of AI-based and traditional writing techniques, but they provide little information about how instructors make pedagogical and ethical choices (Ali, 2024; Duong and Chen, 2025). In line with this, this paper aims to present empirical evidence on how Arab EFL teachers view, negotiate, and respond to the pedagogical, technical, and ethical issues associated with the introduction of AI chatbots in the writing classroom. This is a gap that needs to be bridged so that AI integration frameworks are designed in a context-sensitive, pedagogically grounded way.

The main objective of the research is to explore Arab EFL teachers' perceptions of the pedagogical value, challenges, and ethical issues associated with the proposed use of AI-powered chatbots in writing lessons. The research will also examine the effects of these perceptions on instructional and media practices, with the goal of ensuring the successful, accountable, and pedagogically adequate use of AI chatbots in EFL writing classes. In keeping with this aim, the following objectives are presented in the study:

1. Examine Arab EFL teachers' attitudes toward the pedagogical role and value of AI-driven chatbots in writing instruction.
2. Identify the key pedagogical, technical, and ethical challenges teachers encounter when using AI chatbots in EFL writing classrooms.
3. Investigate how these challenges shape teachers' instructional approaches and attitudes toward employing AI chatbots in writing instruction.

Based on the research problem and objectives, the research questions were defined as follows :

1. What are Arab EFL teachers' perceptions of the pedagogical role and instructional value of AI-powered chatbots in teaching writing?
2. What pedagogical, technical, and ethical challenges do Arab EFL teachers face when integrating AI chatbots into EFL writing classrooms?
3. How do these challenges influence teachers' instructional decisions and the strategies they employ to mediate the use of AI chatbots in EFL writing instruction?

The present study adds to the literature by taking a teacher-centred perspective, which is not well-represented in the studies of AI-assisted EFL writing. The current literature investigates pedagogical reasoning, ethics, and instructional strategies used by teachers when they use AI chatbots. The current research describes the cultural, institutional, and technological realities that may inform the writing classrooms and AI integration, and gives some background information about the trends in the Arab EFL environment. In practice, the results can be used to shape the curriculum, teacher learning, and the school policy. The study also informs the creation of AI literacy courses, instructional designs that encourage responsible use of AI, and creates ethical standards, which would enable teachers to use AI chatbots conscientiously and, consequently, facilitate the development of authentic writing and academic integrity.

Theoretical Framework

The theoretical background of the study is an elaborate framework that considers Arab EFL teachers' perceptions, judgments, and use of AI chatbots in their writing instruction. This framework relies on four complementary views: Technology Acceptance Theory (TAM), Sociocultural Theory, Feedback Theory in L2 Writing, and Digital Readiness Theory. The combination of these views concerns teachers' acceptance of AI, their interaction with technology, their teaching practice, and their situational preparedness.

Technology Acceptance Theory (TAM) is used to examine teachers' use of AI chatbots, focusing on perceived usefulness, ease of use, and intention to use. According to previous studies, teacher perceptions of the pedagogical suitability and educational appropriateness of generative AI are key factors in its adoption in EFL writing instruction (Almusharraf et al., 2025; Mohamed, 2023). In the research, TAM will be utilized to assess AI chatbots and their impact on instructional decision-making among Arab EFL educators.

The Sociocultural Theory predicts the interactive aspect of writing chatbots, and learning is mediated. The AI chatbots may also serve as the tools of scaffolding that support communication and group learning in digitally enhanced EFL classrooms (Ling and Jan, 2025). Pedagogical management is always necessary to deal with the problems caused by reduced human contact and over-reliance of learners. Feedback Theory on L2 writing deals with teacher concerns about AI-generated feedback. Even though automated feedback can be time-saving in the drafting and revision stages, it might be less precise or developmental-focused than teacher-mediated feedback, especially in genre-specific academic writing (Asadi et al., 2025; P. F., W. et al., 2023). This view emphasizes the issue of automated or human feedback as one of the key points in the pedagogical work of the teacher.

Digital Readiness Theory addresses the contextual and institutional aspects of AI integration. The technological competence of teachers, the availability of the infrastructure, and institutional support also determine the ability to use AI-enhanced writing instruction (Ling and Jan, 2025; Mohamed, 2023). Digital inequalities in Arab EFL settings lead to variations in teacher confidence and their teaching methods.

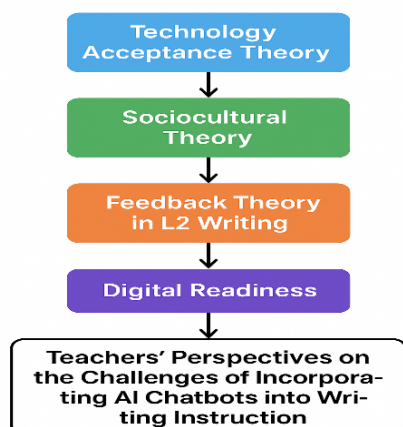


Figure 1. Theoretical framework flowchart [source: Created by the author]

Conceptual Framework

The theoretical framework that has been outlined in the current paper includes five constructs that explain how AI chatbots can be integrated in EFL writing instruction: AI Chatbots, Writing Instruction Processes, Teacher Mediation, Learner Engagement, and Instructional Challenges. Empirical evidence of these constructs is provided by recent studies on AI-mediated EFL writing, which provides an idea of the pedagogical and situational preconditions under which chatbots are used in the classroom setting (Abdullah, 2024; Han et al., 2023; Guo et al., 2024; Suharno et al., 2025; Jeon, 2022).

In this respect, AI chatbots can be used as the facilitators in the critical points of the EFL writing process, including idea generation, drafting, and revision. Nevertheless, its effectiveness depends on intentional pedagogical synthesis instead of its application separately. As a result, the teacher assistance and lesson planning play a regulatory role, and the implementation of chatbots is aligned with the curricular goals and does not lead to the high dependence of the learners on the technological aid in writing.

The interaction between students defines whether the chatbot-based writing process is successful or not as it demarcates how learners see the utility, dependence on AI-generated feedback, and willingness to communicate with the software collaboratively. Additional implementation limitations also include instructional aspects like the accuracy of feedback, misalignment of the curriculum, digital preparedness, and ethics, all of which affect teacher decision making and classroom practice (Al-Azzawi et al., 2025).

Literature Review

Recent studies on the integration of AI chatbots in EFL writing teaching are becoming more and more focused on the experiential views of educators and learners in AI-mediated teaching contexts. Some studies highlight the pedagogical usefulness of chatbots as tools of ideation, drafting, and enabling an interactive writing experience, but only to the extent that such uses align with the instruction design and classroom goals. Duong and Chen (2025) note that although chatbots have the potential to increase student interaction in scaffolded processes, instructor pedagogical planning is equally important to significant integration. Likewise, Almusharraf et al. (2025) confirm that AI-based writing aids in fluency and motivation among students but also raise concerns about the quality of AI-generated text written and the tendency to

use AI hints too often. All these studies, in their turn, promote a more comprehensive conceptualisation of chatbots as learning tools, not technological assistants.

Academic discourse has also influenced the attitudes of educators towards AI chatbots and the extent to which they influence classroom practice. Regarding the flipped classroom, Ling and Jan (2025) mention that the instructors were convinced that chatbots could be helpful in supporting writing during the pre-lesson, but they found automated feedback to be vague, unreliable, and pedagogically demotivating. Similarly, Nguyen (2023) discovered that EFL teachers realised the potential of ChatGPT in helping students to write, but they were unsure of its ability to help students develop higher-order writing, such as argumentation and critical thinking. Developing on this question, Nguyen et al. (2025) proved that even with the prevalence of chatbots to develop vocabulary and refine content, teachers still insisted on the importance of tracking AI use and thought that it could facilitate the development process instead of substituting genuine writing. These observations all highlight the essential role of teacher management in writing instruction that is supported by AI.

The other notable stream of research is the interaction between AI and teacher feedback and its effect on the writing outcomes. According to Asadi et al. (2025), a hybrid model combining ChatGPT feedback with teacher feedback had a positive effect on the writing process and maintained the evaluative dimension of teachers in an AI-based learning environment. However, their findings also raise significant issues regarding the salience, accuracy, and reliability of automated feedback, highlighting the need to encourage teachers to interpret, mediate, and enrich responses produced by chatbots.

Although the body of literature investigating AI-driven chatbots in EFL writing instruction has been growing and has already covered a wide range of topics, such as learning outcomes, the perceptions of students, or writing performance, the literature has not yet addressed much of the contribution of teachers in managing this integration and how to mitigate the pedagogical, ethical, and technical challenges of this integration (Duong and Chen, 2025; Almusharraf et al., 2025; Asadi et al., 2025). Furthermore, studies that have examined teachers' views are often situated in the general education environment or the individual teaching paradigm, overlooking institutional, digital preparedness, and cultural issues, especially in Arab EFL contexts (Ling and Jan, 2025; Nguyen et al., 2025).

To address these gaps, the current research will be teacher-centred, exploring Arab EFL teachers' perceptions of AI chatbots in teaching writing and how these perceptions influence their instructional choices and mediation strategies to ensure the appropriate use of AI tools is pedagogically valid and ethically responsible.

Methodology

Study Design

The study utilized a sequential explanatory mixed-method research design, which consists of two stages. First, the quantitative step became the main focus that defined general patterns in attitudes, issues, and teacher methods among Arab EFL instructors in the context of the integration of AI chatbot in writing lessons. The next qualitative stage aimed at expanding on these quantitative results by conducting in-depth interviews with a purposely chosen group of teachers.

Participants

The sample was made up of Arab EFL teachers working in universities and secondary schools in various Arab states. A purposive sampling design was used to choose teachers who had prior experience in using artificial intelligence tools, especially chatbots, in EFL writing instruction. Overall, forty teachers were included in the quantitative survey, with twelve of them attending the qualitative interviews. The sample was also diverse in terms of the type of institution, training of teachers in educational technology, and familiarity with AI-based writing technology, thus covering a broad range of instructional settings in the Arab EFL context. The demographic specifics of the participants are displayed in Table 1.

Table 1. *Participants' characteristics of Arab EFL teachers*

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	18	45.0%
Gender	Female	22	55.0%
Age Group	25–34 years	12	30.0%
Age Group	35–44 years	19	47.5%
Age Group	45+ years	9	22.5%
Years of Teaching Experience	Less than 5 years	7	17.5%
Years of Teaching Experience	5–10 years	14	35.0%
Years of Teaching Experience	More than 10 years	19	47.5%
Institution Type	University	21	52.5%
Training in Educational Technology	Secondary school	19	47.5%
Training in Educational Technology	Yes	28	70.0%
	No	12	30.0%
Previous Experience with AI Tools	Yes	31	77.5%
Previous Experience with AI Tools	No	9	22.5%
Country of Employment	Iraq	16	40.0%
Country of Employment	Jordan	7	17.5%
Country of Employment	Saudi Arabia	6	15.0%
Country of Employment	Egypt	5	12.5%
Country of Employment	UAE	4	10.0%
Country of Employment	Others (Lebanon, Oman, Qatar)	2	5.0%

Study Instrument

A questionnaire was designed to measure three fundamental areas of the research:

1. Educators' attitude towards chatbots.
2. Pedagogical, technical, and moral dilemmas.
3. Pedagogical principles for dealing with AI items were developed based on the Technology Acceptance Model (TAM), sociocultural theory, and more recent empirical evidence on AI-mediated writing instruction.

In teaching. It was done using a five-point Likert scale between strongly disagree and strongly agree. Instrument review, pilot test, and validation procedures (content validity, EFA, CFA, and reliability) were conducted on the instrument as presented in the Instrument Validity and Reliability section. Literature section.

Data Collection Procedures

Quantitative Phase

The questionnaire was independently distributed via academic networks, the EFL department, and teaching professionals' groups. The study participants were asked to complete the instrument at their own discretion, and confidentiality was guaranteed.

Qualitative Phase

The semi-structured interviews were presented to a smaller group of teachers who agreed to further involvement. The interview guide investigated:

- The thoughts of the teachers about the accuracy of chatbots.
- Dilemma of ethics and pedagogy.
- Student misuse experiences or overreliance.
- What they have discovered to be successful in dealing with AI-assisted writing.

Their institutional setting and limitations: The interviews were conducted online via Zoom or in person (based on participants' availability) and lasted 20-35 minutes.

Data Analysis

Quantitative Analysis

SPSS was used to analyze quantitative data. Quantitative data. The discussion was conducted in the following way:

- Descriptive statistics (means, standard deviations, level of interpretation).
- Validity and reliability (KMO, Bartlett, EFA, CFA, Cronbach a, Omega) tests.

Inferential tests to assess the group differences and patterns of significance:

- T-tests of independent samples.
- Multi-group ANOVA.
- Calculations of the effect sizes (Cohen d, eta squared)
- Correlation tests to investigate construct relationship.

These processes enabled the paper to go beyond the descriptive trends and identify statistically significant patterns in teacher perceptions and problems.

Qualitative Analysis

The qualitative aspect of the given research used inductive thematic analysis in order to examine the perceptions of teachers regarding the pedagogical, technical, and ethical implication of incorporating AI chatbots in teaching writing to EFL students. The semi-structured interviews were transcribed in word-to-letter, and their analysis was conducted based on the multi-stage coding process that involved open, axial, and selective coding.

To ensure the code is analytically consistent, a codebook was created to direct the coding procedure. Two independent coders were used to analyze a sub-set of information to increase reliability, and intercoder reliability was evaluated based on Cohen kappa (= 0.82), which represents high reliability. The discussion helped to overcome the difference that occurred between the parties.

Data saturation was attained at the eleventh interview and the transcripts that came after that helped to strengthen the current themes. The quantitative results were then combined with qualitative results to check the areas of similarity and differences, thus, giving a holistic explanation of the perceptions of the teachers in the mixed-method design.

Results

In this part, the findings derived by the sequential explanatory mixed-methods design to be applied in the current study are described.

Objective 1: To establish what Arab EFL teachers perceive the role and usefulness of AI-powered chatbots to help teach writing

Based on the quantitative data, teachers are inclined to advocate the pedagogical utility of AI chatbots in the most positive terms, namely to assist students in the idea-generation phase, draft revision, and a chosen writing sub-skill. Figure 2, the construction with the highest rating, visually summarized the descriptive trends, and, as could be observed, the overall frequency of the teacher perceptions across the four modes of measurement was shown in the figure. Numerical data is supported by this value, which suggests that the chatbot is highly suitable to be used as a writing development tool and a warning against

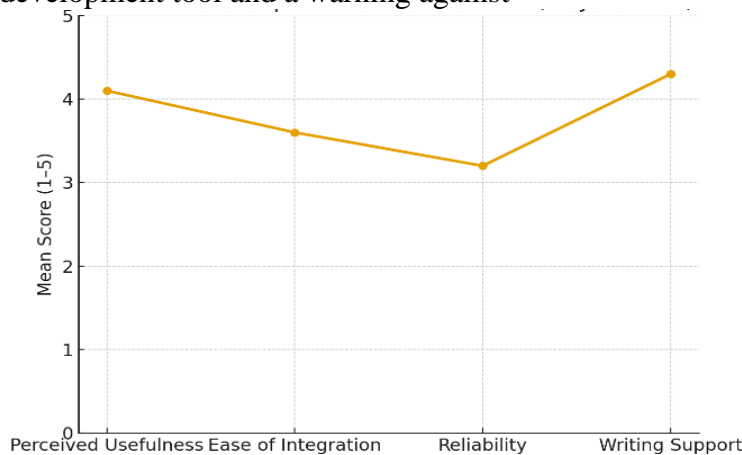


Figure 2. Teachers' Perceptions of AI Chatbots

reliability. The qualitative interview data confirms these trends; most teachers emphasized that, despite chatbots assisting students in creating structured text and practicing a language, the text in most instances needs to be checked by a teacher to eliminate errors or ambiguities. The twofold vision is drawn out in these lessons, as AI chatbots are seen as useful writing assistants, though educators approach their unrestricted implementation in the writing classroom. To extrapolate the descriptive results in Figure 2, inferential statistical tests were performed to determine whether teachers' perceptions of AI chatbots were significantly higher than the neutral value of 3.00. One-sample t-tests were conducted sequentially on the three dimensions of perception, that is, perceived usefulness, ease of use, and learning enhancement, to determine the significance of the difference regarding statistical significance and magnitude of the positive or negative attitudes of teachers. The findings in Table 2 show how far the teachers' perceptions deviate from the middle point (neutral). Being neutral.

Table 2. One-sample t-test for teachers' perceptions of AI.

Dimension	Mean	t-value	p-value	Effect Size (Cohen's d)	Interpretation
Perceived Usefulness	3.84	6.91	p < .001	1.09	Strong positive perception
Ease of Use	3.72	5.88	p < .001	0.95	Significantly above neutral
Learning Enhancement	3.65	4.77	p < .001	0.77	Clear positive orientation

In addition to testing differences in the means, correlation tests were conducted to examine the correlations among the three dimensions of perceptions. This discussion was conducted to identify how teachers with more favorable perspectives on the relevance of AI chatbots also have more favorable views on their ease of use and effectiveness in facilitating learning. The correlation coefficients in Table 3 indicate the internal consistency of the perception constructs.

Table 3. Correlation matrix for perception dimensions

Variables	PU	EU	LE
Perceived Usefulness (PU)	1	0.62	0.58
Ease of Use (EU)	0.62	1	0.55
Learning Enhancement (LE)	0.52	0.55	1

Objective 2: The Results of the Significant Instructional, Technical, and Ethical dilemmas of the Arab EFL Teachers

The second goal explored the pedagogical, technical, and ethical issues that Arab EFL instructors face when they integrate AI chatbots into writing lessons. Quantitative analysis shows that the quality and reliability of AI-generated feedback are the most salient concerns based on the highest mean score ($M = 4.4$). This finding is supported by the interview data, which indicate that, although there are some benefits of chatbot feedback, it is often viewed as shallow or not attentive to the context, thus requiring continuous supervision of teachers (Saeed, 2025). Another critical problem was the overuse of AI tools ($M = 4.1$), especially among lower-ability students, who tend to replace chatbot responses with their own original texts. Ethical and academic integrity issues were also at the forefront ($M = 3.9$), and teachers reported cases of students providing AI-generated work without learning. The technological preparedness issues were moderate ($M = 3.5$) as access to the infrastructure, institutional policies, and teacher training was unevenly distributed. On the whole, the results indicate that teachers are aware of the potential of AI chatbots as instructional tools, but they are concerned about their pedagogical consequences. The challenges are shown in Figure 3 and Table 4 .

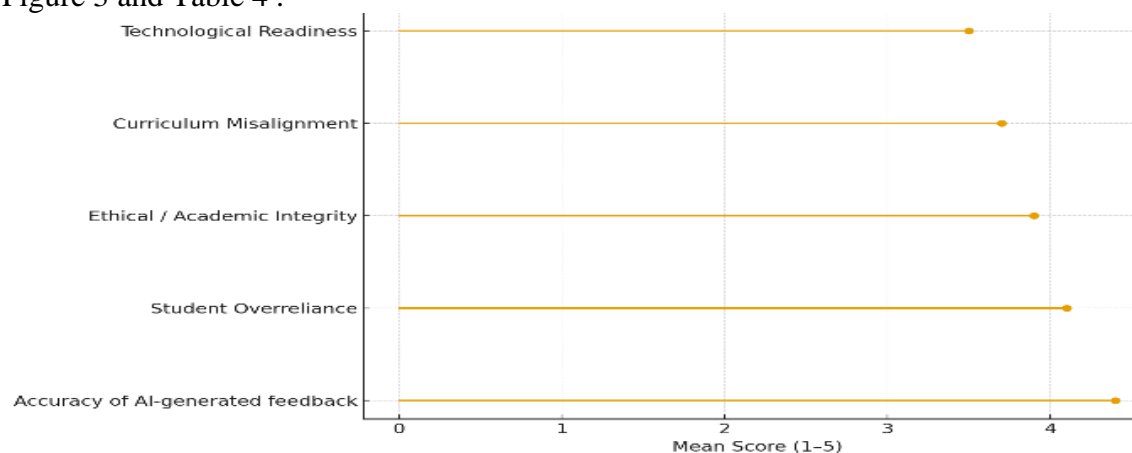


Figure 3. Teachers' reported challenges when using AI chatbots

Table 4. *One-Way ANOVA for challenges by teaching experience*

Challenge Dimension	F-value	p-value	Interpretation
Technical Challenges	4.12	p = .021	Significant differences based on experience
Pedagogical Challenges	0.94	p = .398	No significant differences
Ethical Concerns	3.31	p = .045	Marginal but significant differences

A further investigation into the impact of prior educational technology training on the difficulties teachers face when working with AI chatbots was conducted using an independent-samples test of the trained and untrained groups. The objective of this test was to determine whether technological preparedness moderates the magnitude of challenges faced during AI integration. Table 5 above indicates significant differences between the two groups.

Table 5. *Independent samples t-test for challenges by training in educational technology*

Dimension	Mean (Trained)	Mean (Not Trained)	t-value	p-value	Interpretation
Technical Challenges	3.12	3.55	2.41	p = .020	Untrained teachers face more difficulties
Ethical Concerns	3.68	3.89	1.19	p = .241	Not significant
Linguistic Challenges	3.21	3.72	2.87	p = .006	Significant difference: trained teachers report fewer issues

In addition to statistical significance, effect sizes were estimated to assess the practical significance of the ANOVA-identified group differences. Effect sizes (e^2) are useful indicators of the magnitude of observed differences. The outcomes of the estimates, as reported in Table 6, situate the levels of the effects in the dimensions of challenges.

Table 6. *Effect size estimates for ANOVA (η^2)*

Dimension	η^2	Interpretation
Technical Challenges	0.12	Medium effect
Pedagogical Challenges	0.03	Small effect
Ethical Concerns	0.09	Medium effect

Qualitative Findings for Objective Two: Challenges of Integrating AI Chatbots

The qualitative research provided some extra information about the pedagogical, technical, and ethical issues EFL instructors confront during the introduction of AI chatbots into the writing lesson. The coding procedure resulted in three broad themes, each of which was followed by several subthemes and examples of the quotations of teacher interviews. These themes help to highlight the realities of teaching and the situational limitations that define the ways in which educators interact with AI writing tools in Arab EFL classroom settings.

Table 7. *Qualitative themes and supporting evidence for objective two*

Theme	Subtheme	Representative Supporting Evidence
Pedagogical Challenges in AI-Assisted Writing	Student overreliance on AI feedback	“Some students depend too heavily on chatbot suggestions and submit texts without fully engaging in the writing process.”
	Reduced cognitive engagement	“I noticed less critical thinking when students relied on AI-generated drafts instead of developing their own ideas.”
Technical Challenges and Tool Limitations	Inconsistent quality of AI output	“The feedback provided by chatbots is sometimes inaccurate or too generic, especially for academic writing tasks.”

	Language and contextual mismatch	“AI tools often fail to account for the specific linguistic needs of Arab EFL learners.”
Ethical and Assessment-Related Concerns	Fair assessment of student work	“It is difficult to evaluate students’ real writing abilities when AI assistance is not clearly disclosed.”
	Academic integrity and plagiarism risks	“The boundary between student work and AI-generated content is not always clear, which raises ethical concerns.”

These qualitative observations support and elaborate on the quantitative results mentioned above. Although the statistical findings showed strong differences in perceived challenges by training and institutional factors, the qualitative themes indicate that perceived challenges are not limited to skills or experience, but rather because of pedagogical constraints, technological stability, and situational ethical factors. All these aspects define the willingness of teachers to use AI tools. Qualitative evidence also suggests that the deployment of AI needs to be properly scaffolded, not to mention that institutional policies and extensive training guidelines are needed. These principles must strictly discourage the use of totally automated feedback systems.

Objective 3: Findings on Teachers’ Pedagogical Strategies for Managing AI Chatbot Integration in EFL Writing Instruction

The third research question explored the pedagogical strategies that Arab EFL teachers use to strike the balance between using AI chatbots in the writing teaching and learning process and encouraging meaningful learning among students without encouraging overdependence. Empirical findings indicate that instructors have embraced systematic and structured approaches that make AI chatbots supplementary tools and not part of the writing process. These plans involve scaffolding chatbots to direct learner activity, the integration of AI literacies in writing programs, and the use of verification-based activities to encourage students to review or proofread text generated by AI. All these practices indicate mediated integration strategy in line with process-based writing pedagogy. Instructors rated four teaching strategies and measured the amount of effort needed. The AI-guided scaffold was rated the best (M = 4.3), as it focuses on ideation/sketching, not on writing a complete essay. This was then followed by critical evaluation activities (M = 4.0), during which learners were engaged in evaluating and editing chatbot generated materials. Staged writing, which is a partial form of integration, also scored moderately (M = 3.8) with AI being used selectively in brainstorming and feedback analysis processes. The lowest score was given to policies limiting AI (M = 3.6), as it is more based on pedagogical control than a complete prohibition. On the whole, the results suggest that educators attempt to reconcile the advantages of AI with the long-term interaction between teachers and students.

These findings are supported by qualitative data showing that teachers discussed the value of scaffolding to avoid passive reliance on AI-generated text. Guided prompts and critical evaluation activities were cited to improve students' analytical skills, especially in coherence, accuracy, and rhetorical structure. The concept of staged integration was considered a viable concession that still allows learners to maintain their attention during planning, drafting, and revision. Limited-use policies were also accepted, but teachers were always inclined to choose controlled access and the explicit teaching of digital and artificial intelligence. To test whether the instructional techniques could depend on institutional conditions, a one-way ANOVA was conducted comparing teachers working in universities and secondary schools. Table 8 shows that differences in strategy adoption across institutional types emerged, supporting the role of the educational setting in AI-supported instructional practices.

Table 8. *One-way ANOVA for instructional strategies by institution type*

Strategy	F-value	p-value	Interpretation
Guided AI Use	5.44	p = .025	Universities apply it more frequently
Scaffolding Strategies	0.88	p = .423	No significant differences
Monitoring & Feedback	6.01	p = .017	Universities offer more structured monitoring

To identify a significant predictor of the use of AI chatbots by teachers, a multiple regression analysis was carried out in which perceived usefulness, ease of use, and ethical concerns were used as predictors. This model offers an analytical view of how cognitive and affective perceptions combine to inform a strategic instruction decision. Table 9 presents the regression results demonstrating the predictive power of the individual perception dimensions.

Table 9. *Multiple regression model predicting strategy adoption*

Predictor	β	t-value	p-value
Perceived Usefulness	0.41	3.88	p < 0.001
Ease of Use	0.33	2.97	p = 0.005
Ethical Concerns	-.18	-1.77	p = 0.084

Qualitative Findings for Objective Three: Instructional Consequences of AI Chatbot Integration

The qualitative inference also explained how the AI chatbots transform teaching and learning activities, evaluation relationships, and the roles of teachers and students in English as a Foreign Language (EFL) writing class. Three major themes were identified, each with several subthemes, and explanatory quotations reflect the experiences of teachers working in different institutional settings.

Table 10. *Qualitative themes and supporting evidence for objective three*

Theme	Subtheme	Representative Supporting Evidence
Impact on Teachers' Instructional Decisions	Selective and cautious AI adoption	"I use chatbots only in limited stages of writing because I am concerned about students becoming too dependent on them."
	Preference for blended feedback	"AI feedback can be helpful, but it should always be combined with teacher guidance."
Influence on Teaching Practices	Increased monitoring of student work	"I now spend more time checking whether students actually understand what the chatbot produces."
	Redesign of writing tasks	"I had to change my writing assignments to reduce direct copying from AI tools."
Willingness to Adopt AI Chatbots	Conditional acceptance of AI tools	"I am open to using chatbots if there are clear rules and training on how to use them properly."
	Need for institutional support	"Without official guidelines or training, it is difficult to confidently integrate AI into my teaching."

The qualitative data reveal that the effects of AI chatbots go beyond the technical effectiveness and the challenges faced by students to modify the instructional process, the assessment process, and the relationship between students and teachers. These results can be supported by the quantitative trends, which indicate a significant difference in the perceptions of

the teacher training levels and types of institutions, but the qualitative data can be used to explain how these differences occur.

The implementation of AI in academic writing has its opportunities and challenges and requires the creation of guidelines that can assist teachers and students to develop reflective, critical, and ethically sound writing practices.

Discussion

The section will directly respond to the research questions of the study and depending on the quantitative and qualitative findings will position the findings in the context of the wider body of literature and theories.

As far as the first research question is concerned, the data reveal that educators consider AI chatbots as useful supplements, which can be used as ideation, drafting, and linguistic assistance. Quantitative analysis indicates that the perceived usefulness, ease of use, and learning enhancement produced significantly positive means scores, whereas qualitative data confirm the idea that teachers find chatbots as an assistant tool and not as an independent writer (Saeed, 2025). However, educators repeatedly underlined the need to authenticate AI-generated materials and educate students on the use of AI, a rather conservative but rather practical attitude to the use of chatbots (Mohammed and Al-Azzawi, 2025).

In answering the second research question, the research points to the accuracy of feedback, overreliance by students, and academic dishonesty as the most notable obstacles to the implementation of AI chatbots. The respondents also cited lopsided institutional support and technological readiness, which have been influential determinants to their confidence and readiness to embrace AI tools. Quantitative and qualitative data support the idea that these factors are primary, not peripheral, predictors of teacher attitudes to AI-assisted writing teaching.

Regarding the third research question, the results indicate that Arab EFL teachers use mediated and controlled integration strategies, including guided scaffolding, progressively applying AI at designated steps of the writing process, critically analyzing AI-generated text, and overtly teaching AI literacy. Instead of banning AI altogether, teachers choose pedagogical approaches that do not diminish student agency, cognitive engagement, or the authenticity of authorship. This indicates that teacher mediation and instructional design are the main factors driving effective AI integration, rather than chatbots' technological potential.

Comparison to Recent Related Research

The results of the current research are consistent with the recent literature reviewed and also elaborate on it through a context-specific, teacher-focused perspective. In line with previous studies highlighting the facilitative effect of AI chatbots in EFL writing, the teachers involved viewed chatbots as helpful tools for generating ideas, drafting, and linguistically scaffolding, rather than writing agents (Duong and Chen, 2025; Almusharraf et al., 2025). This supports previous findings that the pedagogical worthiness of chatbots is revealed in cases where their application is integrated into intentional teaching design and teacher-directed, but not through unregulated automation.

Meanwhile, the issues mentioned by the Arab EFL teachers regarding the accuracy, superficiality, and contextual mismatch of feedback are quite reminiscent of the previous teacher-centered research discussed in the literature review. In line with the findings of Ling and Jan (2025) and Nguyen (2023), educators in the current study were also skeptical about the pedagogical

effectiveness of AI-generated feedback, especially in higher-order writing skills (argumentation, coherence, and critical reasoning). These results further support the thesis put forward by Asadi et al. (2025) that AI feedback should be used in conjunction with teacher mediation, rather than as an autonomous evaluative system.

In addition, the problem of student overdependence on AI tools reported in this study reflects the views expressed by earlier researchers who cautioned that too much reliance on the output of chatbots, rather than students themselves, can negatively affect their independence and the development of their writing skills (Almusharraf et al., 2025; Nguyen et al., 2025). The existing findings answer the research question by showing how Arab EFL instructors proactively address risks through mediated strategies, such as staged integration of AI activities, guided scaffolding with step-by-step support, and critical evaluation exercises that prompt reflective discussion, all aligned with pedagogical principles in the modern framework of responsible AI application in language instruction.

Lastly, teachers' focus on institutional preparedness, AI literacy, and ethical governance reflects the gaps identified in the literature regarding the contextual and infrastructural determinants affecting AI adoption (Ling and Jan, 2025). By preempting these dimensions in the Arab EFL contexts, the current study does not present any new theoretical claims but consolidates and puts into context the existing empirical data to prove that the successful integration of AI into the writing instruction is not determined by the availability of technology, but by the mediation of teachers, institutional support, and culturally sensitive pedagogical strategies.

Theoretical and Practical Implications

The findings of the research article have theoretical and practical implications for AI-assisted EFL writing. In theory, the results are based on the Technology Acceptance Model (TAM) and human-AI cooperation models, where high perceived usefulness of AI chatbots does not always imply pedagogical application when instructional problems are related to ease of use. Therefore, technology acceptance cannot be considered effective without planned pedagogical mediation. The qualitative data also suggest that the TAM constructs can be further expanded to include aspects of maintaining authorship, student agency, and teacher control, which are considered the most significant variables in the AI-assisted writing context.

In practice, the findings demonstrate that specialized teacher training in AI literacy and right-time engineering is needed, that institutional resources are established to govern student-AI interactions, and that clear rules defining acceptable AI interventions in academic writing are established. The study also highlights the significance of designs associated with assignments, enabling reflection and revision, as well as hybrid models of feedback that integrate teacher support and AI-based recommendations to support responsible and effective writing education.

Relevance of the Findings

The results of the current research are especially important because they are empirical and context-specific, directly addressing gaps identified in the recent literature on AI-assisted EFL writing. Although the previous literature has already recognized the pedagogical value of AI chatbots and raised overall apprehensions regarding the quality of feedback and student reliance (Duong and Chen, 2025; Almusharraf et al., 2025; Asadi et al., 2025), the given study shows how these problems are manifested in the actual instructional decision-making process in Arab EFL classrooms. The findings illuminate how pedagogical control can be practiced, rather than why it

is needed, as hypothesized in prior studies, by foregrounding mediated responses, including guided scaffolding, staged integration, and AI literacy instruction (Ling and Jan 2025; Nguyen et al., 2025). This applicability is also supported by the study's focus on institutional preparedness and ethical governance, which distills the issues of concern in the literature into practical lessons for designing a curriculum, preparing a teacher, and shaping a policy agenda. In turn, the research contributes to existing knowledge by translating recent theoretical and empirical debates into contextualized pedagogical implications that support the primary role of teacher mediation in the effective and ethically accountable implementation of AI in EFL writing instruction.

Conclusion

The paper has discussed the views of Arab EFL teachers on the integration of AI-based chatbots in writing instruction and found that, although teachers acknowledge the pedagogical usefulness of chatbots to generate ideas, provide linguistic scaffolds, and write first drafts, they also raise significant concerns regarding the accuracy of the feedback, the overuse of the chatbots, academic integrity, and imbalanced institutional preparedness. The results show that successful AI integration is primarily based on teacher mediation, and educators are more likely to prefer controlled, staged AI use with guided scaffolding, hybrid feedback, and explicit AI literacy education over uncontrolled, independent AI use. The research also indicates that traditional technology adoption frameworks alone are insufficient to explain how AI is used in writing education, as authorship authenticity, ethical consciousness, and instructional control are the determinants in this area. Although the research has constraints associated with self-reports and the breadth of context, it offers context-sensitive insights that highlight the need for institutional policies, specific teacher training, and pedagogically grounded frameworks to ensure the responsible and efficient application of AI chatbots in Arab EFL writing classrooms.

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