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# **The AI Revolution in Arabic Language Learning: An Analysis of ChatGPT's Role in Autonomous Learning**

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## **Abstract**

The rapid advancement of artificial intelligence (AI) has increasingly influenced language education, including Arabic as a foreign language. This study examines the role of ChatGPT as an AI-based conversational model in supporting autonomous Arabic language learning and explores the pedagogical implications of its use in the digital era. Employing a qualitative conceptual library research approach, the study synthesizes academic literature published between 2020 and 2025 on AI-assisted language learning, learner autonomy, and Arabic language pedagogy. This synthesis is complemented by structured interaction simulations with ChatGPT, which are employed as analytical artifacts. Through conceptual and thematic analysis, the study identifies three core pedagogical functions of ChatGPT: (1) providing interactive and adaptive linguistic input, (2) delivering corrective feedback, and (3) functioning as a co-writing partner that supports text revision. These functions enable flexible, iterative, and reflective language practice while maintaining learner control over the learning process. The findings suggest that the use of ChatGPT should be integrated within a well-defined pedagogical framework, underscoring the continued importance of human instructors and the need for further empirical research. This study proposes a conceptual framework that positions ChatGPT as a learning companion in Arabic language education.

**Keywords:** *Artificial Intelligence, ChatGPT, Arabic Language Learning, Autonomous Learning, Digital Pedagogy*

## Abstrak

Perkembangan pesat kecerdasan buatan (Artificial Intelligence/AI) semakin memengaruhi dunia pendidikan bahasa, termasuk pembelajaran bahasa Arab sebagai bahasa asing. Penelitian ini mengkaji peran ChatGPT sebagai model percakapan berbasis AI dalam mendukung pembelajaran mandiri bahasa Arab serta menelaah implikasi pedagogis pemanfaatannya di era digital. Dengan menggunakan pendekatan kajian pustaka konseptual kualitatif, penelitian ini mensintesis literatur akademik yang dipublikasikan antara tahun 2020–2025 terkait pembelajaran bahasa berbantuan AI, kemandirian belajar, dan pedagogi bahasa Arab. Sintesis tersebut dilengkapi dengan simulasi interaksi terstruktur dengan ChatGPT yang digunakan sebagai artefak analitis. Melalui analisis konseptual dan tematik, penelitian ini mengidentifikasi tiga fungsi pedagogis utama ChatGPT, yaitu: (1) sebagai penyedia input linguistik yang interaktif dan adaptif, (2) sebagai pemberi umpan balik korektif, dan (3) sebagai mitra latihan menulis (co-writing partner) yang mendukung proses revisi teks. Fungsi-fungsi tersebut memungkinkan praktik bahasa yang fleksibel, berulang, dan reflektif dengan kendali belajar tetap berada pada pembelajar. Temuan penelitian menunjukkan bahwa pemanfaatan ChatGPT harus diintegrasikan dalam kerangka pedagogis yang terarah, sekaligus menegaskan pentingnya peran pengajar manusia dan perlunya penelitian empiris lanjutan. Penelitian ini mengajukan kerangka konseptual yang memosisikan ChatGPT sebagai mitra belajar dalam pendidikan bahasa Arab.

**Kata Kunci:** Artificial Intelligence, ChatGPT, Pembelajaran Bahasa Arab, Pembelajaran Mandiri, Pedagogi Digital

## Introduction

Over the past decade, global education has experienced an accelerated transformation toward an increasingly complex and integrated digital learning ecosystem. The use of technology in teaching and learning activities is no longer limited to visual aids or presentation media; rather, it has become a core infrastructure that shapes both the direction and quality of educational processes. The emergence of e-learning, blended learning, and massive open online courses (MOOCs) has shifted educational paradigms from conventional classroom-based instruction to learning environments that transcend spatial and temporal boundaries.<sup>1</sup> This transformation has also given

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<sup>1</sup> عبد الحكيم عبد الرحمن حسين (2024). Muhaffazât al-Alâb al-Raqmiyyah (Gamification) fi Ta'lîmi al-Lughah al-'Arabiyyah: Dirâsatu al-Abhâts al-Mansyûrah

rise to new conceptions of learners' roles, emphasizing greater autonomy, active engagement, and self-directed management of learning supported by digital technologies.

In Indonesia, the rapid digitalization of education in the post-pandemic era has brought significant changes to instructional practices, including language learning. The adoption of various digital platforms, such as Learning Management Systems (LMS), virtual classrooms, and online assessment tools, has not only expanded access to learning but has also demanded higher levels of learner autonomy and digital competence. However, in the context of language education, particularly Arabic language learning, this transformation has largely focused on transferring instructional media from physical classrooms to digital environments, often without a corresponding reinforcement of pedagogical frameworks specifically designed to support autonomous learning.<sup>2</sup>

Within this context, recent developments in artificial intelligence (AI), particularly natural language-based conversational models such as ChatGPT, introduce a pedagogical dimension that differs substantially from conventional digital technologies. Unlike earlier online platforms that are primarily static and instructional in nature, ChatGPT enables dialogic interaction, adaptive feedback, and personalized language learning experiences.<sup>3</sup> These capabilities position ChatGPT not merely as a learning tool, but as a potential learning companion that can strengthen learner autonomy in Arabic language learning.

Recent developments in AI as a modern machine learning paradigm demonstrate a shift in orientation from mere automation toward generativity, namely the capacity of systems to produce text, images, and even conversations that resemble human cognitive output. Technologies such as the Generative Pre-trained Transformer (GPT) developed by OpenAI mark a new phase in digital educational interaction. ChatGPT, one of the largest language models currently

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<sup>2</sup> Tathbīqi Muhaqqazātī al-Al'āb al-'Arabiyyah fī Indūnīsiyā. *Alibba'*: Jurnal Pendidikan Bahasa Arab, 5(1), 1–29.

<sup>2</sup> Muassomah, M., & Abdullah, I. (2021). *Learning with Technology: New Experiences for Indonesian Children During COVID-19*. <https://doi.org/10.2991/assehr.k.210421.120>

<sup>3</sup> Nasaruddin, N. (2024). Using ChatGPT in Teaching Arabic as a Foreign Language. *Arabiyatuna: Jurnal Bahasa Arab*, 8(1), 1. <https://doi.org/10.29240/jba.v8i1.9413>



available, is capable of interpreting natural language prompts, responding to questions with broad contextual awareness, and generating learning materials tailored to users' needs. These capabilities position AI not merely as a supportive tool, but as a potential learning companion capable of fostering adaptive, dialogic, and learner-centered learning experiences.

In the domain of language learning, the application of AI has expanded rapidly through various platforms such as Duolingo,<sup>4</sup> Babbel, Rosetta Stone, and more recently ChatGPT, which can be used to support writing practice, translation, and conversational interaction. Arabic language learning, traditionally associated with methods such as *talaqqi*, memorization, and grammar-focused instruction, is now confronted with new opportunities enabled by AI-based learning systems. AI can provide conversational simulations, morphological analysis, and syntactic error evaluation at a speed and scale unattainable through manual human intervention. Consequently, AI opens new pathways for learners to engage in self-directed learning, receive instant feedback, and cultivate intrinsic motivation to continue learning beyond spatial and temporal constraints.

A growing body of recent research has examined the use of ChatGPT and generative artificial intelligence technologies in language learning, particularly within the contexts of English as a Foreign Language (EFL) and Second Language Acquisition (SLA). Broadly, these studies can be classified into three major strands: (1) technology acceptance-based studies, (2) conceptual analyses of ChatGPT's pedagogical implications in higher education, and (3) investigations into AI-supported self-directed learning and learner motivation.

The first strand is dominated by quantitative studies employing the Technology Acceptance Model (TAM) to examine learners' attitudes, intentions, and actual use of ChatGPT in language learning contexts. Liu (2023), for instance, demonstrates that perceived usefulness functions as a key mediating factor in shaping EFL learners' attitudes and intentions to use ChatGPT for out-of-class learning. This finding is reinforced by Vo (2023), who reports that EFL students generally hold positive attitudes toward the ease of use and potential of ChatGPT, although their perceptions of its usefulness remain moderate

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<sup>4</sup> Khuluq, M., Hasanah, M., Muasshomah, M., & Imamah, N. (2024). Mobile-Assisted Language Learning Apps: The Analysis of Duolingo. *Al-Ta'rib : Jurnal Ilmiah Program Studi Pendidikan Bahasa Arab IAIN Palangka Raya*, 12(2), 229–246. <https://doi.org/10.23971/altarib.v12i2.8806>

and are influenced by academic level.<sup>5</sup> While these studies provide strong empirical evidence regarding learners' acceptance of ChatGPT as a learning technology, their analytical focus remains largely confined to issues of adoption and user perception, rather than examining the pedagogical role of AI in shaping learning processes.

The second strand comprises studies that address the implications of ChatGPT for language learning in higher education from a more conceptual perspective. Baskara (2023), for example, highlights the potential of ChatGPT to provide personalized and authentic language learning experiences, while also identifying ethical challenges and concerns related to shifts in the role of language instructors.<sup>6</sup> Although this line of inquiry enriches understanding of the opportunities and risks associated with AI integration in language education, the discussion remains relatively general and does not systematically link the use of ChatGPT to specific pedagogical frameworks, particularly those aimed at supporting autonomous learning.

Research that more closely engages with issues of learner autonomy is represented by Dizon (2024), who explores the use of ChatGPT for self-directed foreign language learning in out-of-class contexts. The findings indicate that learners utilize ChatGPT for conversational practice, vocabulary enrichment, and language clarification, expressing positive attitudes toward its accessibility and flexibility, despite lingering concerns regarding the linguistic reliability of AI-generated output.<sup>7</sup> Similarly, Anjum (2025) emphasizes ChatGPT's contribution to enhancing learner motivation and engagement through instant feedback, personalized learning

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<sup>5</sup> Vo, T. K. A., & Nguyen, H. (2024). Generative Artificial Intelligence and ChatGPT in Language Learning: EFL Students' Perceptions of Technology Acceptance. *Journal of University Teaching and Learning Practice*, 21(06). <https://doi.org/10.53761/fr1rkj58>

<sup>6</sup> Baskara, R., & Mukarto, M. (2023). Exploring the Implications of ChatGPT for Language Learning in Higher Education. *IJELTAL (Indonesian Journal of English Language Teaching and Applied Linguistics)*, 7(2), 343. <https://doi.org/10.21093/ijeltal.v7i2.1387>

<sup>7</sup> Dizon, G. (2024). ChatGPT as a tool for self-directed foreign language learning. *Innovation in Language Learning and Teaching*, 1–17. <https://doi.org/10.1080/17501229.2024.2413406>

experiences, and non-judgmental interactional environments that support safer and more participatory language learning experiences.<sup>8</sup>

Despite the growing body of research affirming the potential of ChatGPT in language learning, most existing studies remain concentrated on English language contexts, empirically driven approaches centered on user perceptions, and technical aspects of technology adoption. Studies that specifically examine the role of ChatGPT as a learning companion in Arabic language learning, along with its implications for the development of autonomous learning within a broader pedagogical framework, remain relatively limited. Moreover, much of the prior research positions ChatGPT primarily as an instructional tool rather than as a pedagogical entity with the potential to shape learning interaction patterns, learner autonomy, and shifts in instructional roles.

In response to these gaps, the present study offers a novel contribution by advancing a conceptual analysis that positions ChatGPT as a learning companion in Arabic language learning, with particular emphasis on its role in supporting autonomous learning and its associated pedagogical implications. Unlike prior studies that foreground technology acceptance or empirical effectiveness, this research approaches ChatGPT from a language pedagogy perspective, examining how AI contributes to learner autonomy, self-regulated learning practices, and changes in teachers' roles within the Arabic language learning ecosystem in the digital era. Accordingly, this study is guided by the following research questions: (1) How does ChatGPT support autonomous learning in Arabic language education? and (2) What are the pedagogical implications of utilizing ChatGPT in Arabic language learning in the digital era?

## **Method**

This study adopts a qualitative approach employing a library research design with a conceptual and descriptive-analytical orientation.<sup>9</sup> This approach is selected because the study aims to

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<sup>8</sup> Anjum, F., Raheem, B. R., & Ghafar, Z. N. (2025). The Impact of ChatGPT on Enhancing Students' Motivation and Learning Engagement in Second Language Acquisition: Insights from Students. *Journal of E-Learning Research*, 3(2), 1–11. <https://doi.org/10.33422/jelr.v3i2.679>

<sup>9</sup> George, M. W. (2008). *The Elements of Library Research*. Princeton University Press. <https://doi.org/10.1515/9781400830411>

theoretically examine the role of ChatGPT in supporting autonomous Arabic language learning and its pedagogical implications, without involving the collection of empirical data from human participants. The primary focus of the study lies in the conceptual synthesis of theories of autonomous learning, language pedagogy, and developments in artificial intelligence within the context of Arabic language education.

In addition to the literature review, the study incorporates supplementary conceptual data obtained through structured simulations of interactions between the researcher and ChatGPT in Arabic language learning contexts. These simulations are not intended as empirical experiments, but rather as *analytical artifacts* designed to illustrate and examine the potential pedagogical functions of ChatGPT. The interaction scenarios are constructed based on the four Arabic language skills, listening, speaking, reading, and writing, with analytical indicators including the types of linguistic feedback provided, the level of response adaptivity, support for learner autonomy, and the consistency of language output. To maintain analytical objectivity, the interactions were conducted repeatedly using comparable prompt structures, and the outcomes were analyzed reflectively with reference to established theories and findings from previous studies rather than subjective judgment alone.

The literature corpus was drawn from academic publications released between 2020 and 2025, reflecting the growing scholarly attention to the use of generative AI in language education. Literature searches were conducted through major academic databases such as Scopus, Google Scholar, and ResearchGate, using keywords including *ChatGPT*, *artificial intelligence in language learning*, *autonomous learning*, *self-directed learning*, and *Arabic language education*. The selected sources comprised peer-reviewed journal articles, international conference proceedings, and relevant academic book chapters. From the initial search results, studies were selected based on thematic relevance, theoretical contribution, and their alignment with AI-based language learning.

Data analysis was conducted through content analysis and conceptual synthesis.<sup>10</sup> The units of analysis consisted of key concepts, themes, and arguments related to the role of ChatGPT in autonomous learning and its pedagogical implications. The coding process followed

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<sup>10</sup> Paul Mayring. (2014). *Qualitative Content Analysis: Theoretical Foundation, Basic Procedures and Software Solution*. Beltz.

a thematic approach, grouping findings into categories such as the pedagogical functions of AI, support for learner autonomy, patterns of learner-AI interaction, and challenges in language learning implementation.<sup>11</sup> Subsequently, insights derived from the simulated ChatGPT interactions were compared conceptually with findings from previous studies to identify points of convergence, divergence, and the theoretical contributions of the present study. The analytical framework adopted in this research is grounded in autonomous learning and AI-assisted language learning, which serve as the conceptual foundations for data interpretation and conclusion development.<sup>12</sup>

## Results and Discussion

Based on a synthesis of academic literature addressing the use of generative AI in language learning, particularly studies that highlight ChatGPT within the contexts of foreign language learning and autonomous learning, several core pedagogical functions of AI as a support for language learning processes can be identified. The literature indicates that ChatGPT is commonly positioned as a provider of adaptive linguistic input, a source of immediate feedback, and a facilitator of out-of-class language practice. These conceptual insights constitute the analytical foundation of the present study and are subsequently operationalized through structured interaction simulations to illustrate how such functions manifest in Arabic language learning.

The combined synthesis of the literature and the analysis of simulated interactions demonstrate that ChatGPT can be positioned as an interactive and adaptive source of linguistic input. Within the simulated learning scenarios, ChatGPT is able to generate example sentences, dialogues, and linguistic explanations in Arabic that correspond to the level of complexity specified by the user. To clarify ChatGPT's function as a provider of linguistic input in Arabic language learning, this analysis employs structured interaction simulations that represent practices of autonomous learning. One such simulated scenario involves prompting ChatGPT to construct a simple dialogue on the theme of *madrasah*, a topic commonly used at the introductory stage of Arabic language instruction.

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<sup>11</sup> Virginia Braun, & Victoria Clarke. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

<sup>12</sup> Wayne Holmes, Maya Bialik, & Maya Bialik. (2019). *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.

The analytical approach adopted in this section is consistent with previous studies that conceptualize generative AI as a source of comprehensible input and interactive language support in language learning (Liu, 2023; Dizon, 2024; Anjum, 2023). Accordingly, the interaction simulations presented in this study are not intended to serve as new empirical findings, but rather as conceptual artifacts designed to operationalize and illustrate the pedagogical functions of ChatGPT that have already been identified in the literature.

Table 1. Simple Arabic Dialogue Generation Simulation

Simulated Prompt	ChatGPT Response
Construct a simple dialogue in Arabic on the theme of madrasah between two students, using basic vocabulary and simple sentence structures.	الطالب: السلام عليكم، يا أحمد. أحمد: وعليكم السلام، يا علي. كيف حالك؟
	الطالب: أنا بخير، الحمد لله. إلى أين تذهب؟ أحمد: أذهب إلى المدرسة.
	الطالب: ماذا تدرس في المدرسة؟ أحمد: أدرس اللغة العربية والفقه.
	الطالب: بال توفيق، يا أحمد. أحمد: شكرًا، وإياك.

Based on Table 1, ChatGPT's responses to the simulated prompt exhibit several linguistic and pedagogical characteristics that are relevant to beginner-level Arabic language learning. First, from a syntactic perspective, the generated dialogue is dominated by simple sentence patterns commonly used in the early stages of instruction, such as nominal sentences (e.g., أنا بخير) and verbal sentences employing the imperfect verb (*fi'l mudāri*), as in *أذهب إلى المدرسة*. These patterns align with the foundational competencies of novice learners and support the principle of providing comprehensible input.

Second, from a lexical perspective, the vocabulary employed in the dialogue is thematic and contextualized, focusing on the *madrasah* environment. The use of lexical items such as *اللغة العربية*, *أدرس*, *المدرسة*, and *الفقه*/demonstrates ChatGPT's ability to align lexical selection with the specified topic without introducing overly complex or contextually inappropriate terms for beginner learners. This aspect is particularly important in autonomous learning contexts, as the close relationship between vocabulary and context facilitates more effective meaning construction.

Third, in terms of communicative function, the dialogue is structured in a logical and cohesive question–answer sequence. Each utterance serves a clear communicative purpose, including greeting, inquiring about well-being, asking about activities, and closing the

interaction. This structure enables learners to grasp the pragmatic functions of Arabic in everyday interaction, rather than merely memorizing isolated grammatical forms. Consequently, the dialogue can be used as practice material for recognizing basic conversational flow in Arabic.

Fourth, from a pedagogical standpoint, Table 1 indicates that ChatGPT is capable of providing adaptive linguistic input that can be modified according to learners' needs. The presented dialogue can be readily expanded, for example, by adding temporal expressions, lexical variations, or more complex sentence structures upon user request. This flexibility reflects ChatGPT's potential as a dynamic learning resource that supports autonomous learning practices, in which learners maintain control over the level of difficulty and the focus of language practice.

The pattern of linguistic input presentation illustrated in Table 1 is consistent with the findings of Liu (2023) and Dizon (2024), who emphasize the role of generative AI in delivering adaptive, learner-controllable language input within autonomous learning contexts.

Beyond functioning as a provider of linguistic input, the simulation analysis also indicates that ChatGPT can serve as a source of basic linguistic feedback in Arabic language learning. To illustrate this function, an interaction simulation was conducted in which ChatGPT was prompted to correct a learner-generated Arabic sentence and explain the error, as commonly occurs in autonomous learning practices.

Table 2. Linguistic Feedback Simulation

Simulated Prompt	ChatGPT Response
Please correct the following Arabic sentence and explain the error: أنا يذهب إلى المدرسة كل يوم	The correct sentence is: أنا أذهب إلى المدرسة كل يوم. The error in the previous sentence lies in the use of the verb يذهب, which does not agree with the subject (أنا). For the first-person singular subject, the appropriate verb form is أذهب.

From a technical perspective, the feedback provided by ChatGPT in the simulation presented in Table 2 demonstrates several important characteristics. First, the system is able to identify fundamental grammatical errors, particularly those related to subject-verb agreement. Such errors are among the most common difficulties

encountered by beginner learners of Arabic, especially non-native speakers.

Second, ChatGPT does not merely present the correct sentence form, but also provides a brief explanation of the nature and location of the error. This explanation is delivered in relatively accessible language and directly references the relevant grammatical feature, thereby assisting learners in understanding the rationale behind the correction. This pattern of feedback aligns with the principle of *explicit corrective feedback* in language learning, in which errors are clearly identified and followed by appropriate corrective forms.<sup>13</sup>

Third, from a pedagogical standpoint, the simulation illustrates that ChatGPT can support reflective learning processes within autonomous learning contexts. Learners are not only exposed to the correct linguistic form, but are also afforded the opportunity to compare their original output with the corrected version and to understand the underlying grammatical rule. This process enables learners to engage in self-monitoring and self-evaluation of their language production.

Nevertheless, the simulation analysis also indicates that the feedback provided by ChatGPT remains largely confined to explicit grammatical aspects and does not yet fully address more complex dimensions of language use, such as pragmatic nuances or stylistic variation. Accordingly, ChatGPT's role as a feedback provider in Arabic language learning should be understood as a form of basic feedback support rather than a comprehensive substitute for the role of human instructors in delivering more nuanced and context-sensitive correction.

These simulated findings reinforce previous studies suggesting that ChatGPT and similar language models are generally effective in providing explicit corrective feedback for basic grammatical errors, while still exhibiting limitations in addressing pragmatic and stylistic dimensions of language use (Anjum, 2023; Dizon, 2024).

In addition to providing linguistic input and basic corrective feedback, the simulation analysis further indicates that ChatGPT can function as a co-writing partner in Arabic language learning. This function is examined through a simulated scenario involving the

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<sup>13</sup> Tasdemir, M. S., & Yalcin Arslan, F. (2018). Feedback preferences of EFL learners with respect to their learning styles. *Cogent Education*, 5(1), 1481560. <https://doi.org/10.1080/2331186X.2018.1481560>

revision of a short learner-produced text, a practice commonly employed in autonomous writing development.

Table 3. Text Revision Simulation

Simulated Prompt	ChatGPT Response
Please revise and develop the following Arabic paragraph to make it clearer and more coherent: أنا طالب في مدرسة. أدرس اللغة العربية. المدرسة كبيرة. أحب أن أتعلم في المدرسة.	أنا طالب في مدرسة، وأدرس اللغة العربية فيها. مدرستي كبيرة، وأحب أن أتعلم فيها كل يوم.

From a technical standpoint, ChatGPT's revisions in Table 3 reveal several forms of linguistically and pedagogically relevant intervention. First, the system corrects morphological and syntactic errors, such as the insertion of the particle *أن* in the phrase *أحب أن أتعلم* and the adjustment of the adjective *كبير* to *كبير* to ensure agreement with the noun *مدرسة*. These corrections demonstrate ChatGPT's capacity to address common beginner-level errors related to agreement and basic sentence structure.

Second, ChatGPT consolidates simple sentences into a more cohesive structure by adding conjunctions such as *و* and contextual referential expressions such as *فيها*. These interventions not only improve grammatical accuracy but also enhance textual cohesion. From a writing pedagogy perspective, this aspect is significant because it helps learners recognize that writing proficiency involves not only grammatical correctness at the sentence level but also coherence and logical linkage across ideas within a paragraph.<sup>14</sup>

Third, the simulation illustrates that ChatGPT functions as a collaborative partner in the writing process rather than merely as an automated correction tool. Learners remain the primary producers of the initial text, while ChatGPT acts as a revision facilitator by offering structurally and stylistically improved versions of the text. This interaction pattern aligns with the principles of *process-based writing*, which conceptualize writing as a staged process involving drafting, revising, and refining.<sup>15</sup>

<sup>14</sup> Alghasab, M. B. (2025). English as a foreign language (EFL) secondary school students' use of artificial intelligence (AI) tools for developing writing skills: unveiling practices and perceptions. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2505304>

<sup>15</sup> Firoozjahantigh, M., Fakhri Alamdari, E., & Marzban, A. (2021). Investigating the Effect of Process-based Instruction of Writing on the IELTS Writing

ChatGPT's role as a co-writing partner in this simulation is consistent with the perspectives of Baskara (2023)<sup>16</sup> and Dizon (2024)<sup>17</sup> who position AI as a supportive tool within process-based writing approaches, where technology functions as a facilitator of revision and textual structuring rather than as a replacement for learners' cognitive engagement. Within this process, learners continue to play an active role as the producers of the initial text, the decision-makers regarding revision direction, and the evaluators of the suitability of revised outputs in relation to their learning objectives. This interaction pattern indicates that primary control over the learning process remains with the learner, while ChatGPT serves as a responsive source of linguistic and technical support tailored to user needs.

## Discussion

The analytical findings presented in the Results section indicate that ChatGPT possesses pedagogical potential as a provider of adaptive linguistic input, a source of basic feedback, and a co-writing partner in Arabic language learning. Within the context of discussion, these findings require further interpretation to elucidate their pedagogical implications, particularly in relation to autonomous learning in the digital era. In this study, autonomous learning is not understood as a learning process devoid of guidance, but rather as one that places primary control in the hands of learners, with technology functioning as a facilitator of language practice and reflective learning.

Learner interactions with ChatGPT, as analyzed in the Results section, reveal a shift in the locus of learning control from the instructor to the learner. Learners actively determine their learning objectives, select types of practice, and utilize linguistic feedback to refine their language production. This pattern aligns with the literature on autonomous learning, which emphasizes the importance of learner control over the learning process,<sup>18</sup> including the management of

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Task Two Performance of Iranian EFL Learners: Focusing on Hedging & Boosting. *Cogent Education*, 8(1). <https://doi.org/10.1080/2331186X.2021.1881202>

<sup>16</sup> Baskara (2023). Exploring the Implications of ChatGPT for Language Learning in Higher Education.

<sup>17</sup> Dizon (2024). ChatGPT as a tool for self-directed foreign language learning.

<sup>18</sup> Lu, D. (Jason), & Zeng, Y. (2025). Exploring the use of ChatGPT-generated model texts as a feedback instrument: EFL students' text quality and perceptions. *Innovation in Language Learning and Teaching*, 1–21. <https://doi.org/10.1080/17501229.2025.2525341>

learning materials, strategies, and self-evaluation.<sup>19</sup> In this context, ChatGPT functions as a medium that enables flexible and repeated language practice, thereby extending learning spaces beyond the confines of formal classroom instruction.<sup>20</sup>

The pedagogical implications of these findings also involve a reconfiguration of the role of Arabic language teachers. With the presence of ChatGPT as a source of linguistic input and practice, teachers are no longer positioned solely as transmitters of content, but rather as designers of learning experiences and guides of learner-technology interaction. Teachers play a critical role in designing meaningful tasks, directing the use of ChatGPT in alignment with instructional objectives, and critically evaluating learning outcomes.<sup>21</sup> This role is consistent with the literature on computer-assisted language learning and AI-assisted language learning, which underscores that technology serves to support pedagogy rather than to replace the instructional role of teachers.<sup>22</sup>

In Arabic language learning design, ChatGPT has the potential to be integrated as part of more flexible instructional approaches, such as blended learning or task-based learning. Dialogue practice, text revision, and vocabulary exploration facilitated by ChatGPT can be positioned as supplementary out-of-class activities, while face-to-face interactions can be devoted to deeper meaning-making, discussion, and the reinforcement of communicative competence. In this way, ChatGPT does not operate as an autonomous instructional system, but rather as a component within a broader pedagogical ecosystem.<sup>23</sup>

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<sup>19</sup> Allaithy, A., & Zaki, M. (2025). Evaluation of AI-generated reading comprehension materials for Arabic language teaching. *Computer Assisted Language Learning*, 1–33. <https://doi.org/10.1080/09588221.2025.2474037>

<sup>20</sup> Gharaibeh, M., & Basulayyim, A. (2025). ChatGPT enhances reading comprehension for children with dyslexia in Arabic language. *Disability and Rehabilitation: Assistive Technology*, 20(8), 2858–2871. <https://doi.org/10.1080/17483107.2025.2508389>

<sup>21</sup> Almanea, M. (2024). Instructors' and learners' perspectives on using ChatGPT in English as a foreign language courses and its effect on academic integrity. *Computer Assisted Language Learning*, 1–26. <https://doi.org/10.1080/09588221.2024.2410158>

<sup>22</sup> Belda-Medina, J., & Kokošková, V. (2024). ChatGPT for language learning: assessing teacher candidates' skills and perceptions using the Technology Acceptance Model (TAM). *Innovation in Language Learning and Teaching*, 1–16. <https://doi.org/10.1080/17501229.2024.2435900>

<sup>23</sup> Giray, L., Fabros, B., Villarama, J., Gumalin, D. L., & Saavedra, J. B. (2025). Acceptance of and Satisfaction with ChatGPT as Learning Tool in Higher

Nevertheless, these pedagogical implications must be interpreted in light of several limitations. The analysis indicates that ChatGPT continues to exhibit constraints in addressing pragmatic and context-dependent aspects of language use and tends to be more effective at the level of basic linguistic structures. Moreover, the use of ChatGPT in autonomous learning contexts carries the potential risk of learner overdependence if not accompanied by the development of critical awareness. Consequently, the integration of ChatGPT into Arabic language learning requires a clearly articulated pedagogical framework to ensure that technology functions as a reflective support tool rather than as an instant-answer mechanism that may diminish learning depth.<sup>24</sup>

When compared with previous studies, the findings and discussion of this research reinforce the view that ChatGPT holds significant potential for supporting out-of-class language learning, as reported in studies on AI-assisted foreign language learning. However, this study offers a conceptual contribution by situating ChatGPT within the specific context of Arabic language learning and by emphasizing pedagogical analysis grounded in literature synthesis and operationalized through interaction simulations. This approach enables a technical yet reflective mapping of ChatGPT's pedagogical roles without making empirical claims regarding learning effectiveness beyond the methodological scope of the study.

Overall, this discussion demonstrates that the use of ChatGPT in Arabic language learning carries important pedagogical implications, particularly in supporting structured and guided autonomous learning. ChatGPT functions as a facilitator of language practice and reflective learning, while the pedagogical role of human instructors remains essential in guiding, scaffolding, and evaluating the learning process.<sup>25</sup> From this perspective, the integration of ChatGPT should be

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Education Through the Technology Acceptance Model (TAM): A Case from the Philippines. *Internet Reference Services Quarterly*, 29(4), 527–546. <https://doi.org/10.1080/10875301.2025.2542212>

<sup>24</sup> Zaimah, N. R., Risti Kamila Wening Estu, Hidayah, S. F., Hadi, S., & Aiden Button. (2024). Harnessing Gemini for Arabic Mastery: Educators' and Learners' Views. *Alibbaa': Jurnal Pendidikan Bahasa Arab*, 5(2), 166–188. <https://doi.org/10.19105/ajpba.v5i2.14808>

<sup>25</sup> Wang, Y., Zhang, T., Yao, L., & Seedhouse, P. (2025). A scoping review of empirical studies on generative artificial intelligence in language education. *Innovation in Language Learning and Teaching*, 1–28. <https://doi.org/10.1080/17501229.2025.2509759>

understood as part of an ongoing transformation of Arabic language pedagogy in the digital era, one that requires a careful balance between technological utilization and the reinforcement of pedagogical guidance.

## **Conclusion**

This study aimed to address two research questions concerning the role of ChatGPT in supporting autonomous Arabic language learning and the pedagogical implications of its use in the digital era. Employing a conceptual literature review approach enriched by structured interaction simulations as analytical artifacts, the study generated several key findings. The analysis indicates that ChatGPT supports autonomous Arabic language learning through three primary pedagogical functions: (1) serving as a provider of interactive and adaptive linguistic input, (2) acting as a source of basic linguistic feedback that enables learners to reflect on language errors, and (3) functioning as a co-writing partner that facilitates text revision and the reinforcement of textual structure. Through these functions, ChatGPT enables flexible, iterative, and reflective language practice, while primary control over the learning process remains with the learner.

The pedagogical implications of utilizing ChatGPT in Arabic language learning necessitate a repositioning of teachers' roles as designers of learning experiences, guides of learner-technology interaction, and evaluators of learning processes. ChatGPT is most effective when employed as part of an integrated learning ecosystem rather than as a substitute for human pedagogical roles. Such integration must be implemented in a deliberate and critical manner, given ChatGPT's limitations in addressing pragmatic depth in language use and the potential risk of learner overreliance on technology. As a recommendation for future research, empirical studies are needed to examine the impact of ChatGPT on Arabic language learning outcomes across diverse educational contexts, to explore effective pedagogical strategies for AI integration, and to investigate the dynamics of self-regulation and learner-AI interaction in authentic learning practices.

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