



Knowledge Construction In Arabic Language Learning In The Chatgpt Era: Opportunities And Pedagogical Transformations

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Abstract: The development of artificial intelligence (AI), particularly ChatGPT, has significantly changed university-level Arabic language learning. This study aims to analyze students' knowledge construction in Arabic language learning in the ChatGPT era, identify emerging pedagogical opportunities, and examine the pedagogical transformations resulting from integrating AI technology to enhance learning effectiveness. This study uses a qualitative library research approach and conducts content analysis of relevant academic literature. The findings reveal that: first, knowledge construction occurs through adaptive scaffolding, dialogic practice, instant feedback, and vocabulary exploration, which are aligned with Vygotsky's Zone of Proximal Development (ZPD), enabling students to construct knowledge in collaborative and contextual learning environments actively; second, ChatGPT provides substantial opportunities through personalized learning, the simulation of authentic Arabic language environments, the development of critical digital literacy, and the enhancement of academic writing skills in innovative and sustainable ways; third, a pedagogical transformation has occurred in the form of a shift from teacher-centered learning to AI-mediated learner-centered learning, the reconfiguration of lecturers' roles as critical facilitators and validators of AI-generated outputs, and the need for a curriculum that is adaptive to technological advancement. This study offers a comprehensive conceptual contribution to developing AI-based Arabic language learning while upholding critical thinking, reflective learning, and academic integrity.

Keywords: *Arabic language learning; ChatGPT; Constructivism; Knowledge construction; Pedagogical transformation.*

INTRODUCTION

The rapid development of artificial intelligence (AI) in recent years has brought significant changes to the field of education, including Arabic language learning in higher education (Kasneci et al., 2023). One of the most widely utilized AI technologies today is ChatGPT, a system developed by OpenAI that has gained widespread recognition since its release in 2022. The emergence of ChatGPT has created new learning opportunities that are more flexible, interactive, and learner-centered due to its ability to provide adaptive responses to diverse user needs (Lo, 2023; AlAfnan et al., 2023). In the educational context, AI has become an integral part of learning transformation, particularly in language education. This phenomenon indicates that the integration of AI into educational practices requires continuous pedagogical adaptation

(Holmes et al., 2022). The growing use of ChatGPT in higher education also demonstrates that AI is becoming an essential component of the evolving learning ecosystem and academic interactions within universities (Bhullar et al., 2024). Students can now use AI to search for information, translate texts, compose academic writing, and complete assignments independently (Wahyudi & Sulaeman, 2023).

In the context of Arabic language learning in higher education, technology integration presents unique complexities. Arabic instruction demands not only communicative proficiency but also a deep mastery of complex grammatical structures (Nahwu and Sharf), semantics, and contextual nuance embedded in Islamic literature. While ChatGPT provides instant translation, grammar checks, and conversational simulations, its widespread use raises critical concerns. The ease of

obtaining immediate outputs risks fostering technological passivity, compromising academic integrity, and eroding students' critical thinking and deep linguistic reflection (Omar Ali et al., 2024; L. Gammoh, 2024).

Recent scholarship on AI in Arabic education has actively documented its technical utility. For instance, Wahyudi & Sulaeman (2023) and Zakarneh et al. (2025) demonstrated ChatGPT's efficacy in improving student writing tasks and vocabulary acquisition. Similarly, Nasaruddin (2024) explored academic integrity protocols regarding AI tools in Islamic higher education settings. These foundational studies establish that AI can enhance procedural efficiency and output quality in language tasks.

However, a critical research gap remains. Existing literature predominantly treats ChatGPT as a static utility tool or an external writing assistant, focusing largely on user satisfaction and short-term performance metrics (Sumiarni et al., 2024). Few studies have investigated how generative AI alters the internal mechanisms of students' knowledge construction or how it reshapes the broader pedagogical dynamics between lecturers, students, and digital media. Addressing this gap is urgent; without a sound theoretical framework to explain AI-mediated learning, educators risk adopting AI passively without safeguarding critical literacy or optimizing pedagogical transformations.

To bridge this gap, this study offers novelty by examining the integration of ChatGPT through the theoretical lens of Vygotsky's (1978) social constructivism. Rather than evaluating ChatGPT solely as a software utility, this paper conceptualizes AI as a digital mediator operating within the Zone of Proximal Development (ZPD), thereby establishing a novel framework for knowledge construction and pedagogical adaptation in Arabic education.

Driven by this urgency and theoretical foundation, this study aims to analyze the transformation of Arabic language pedagogy in the generative AI era. Specifically, it addresses three core research questions: (1) How is knowledge constructed in Arabic language learning in the era of ChatGPT? (2) What pedagogical opportunities does ChatGPT offer to enhance Arabic language instruction? and (3) What structural and pedagogical transformations emerge from integrating ChatGPT into higher education?

METHOD

This study employed a qualitative research method using a library research approach (Zed, 2004; Supriyono, 2024). Through this approach, various concepts, theories, and phenomena related to knowledge construction in Arabic language learning in the ChatGPT era were systematically analyzed. The data sources consisted of academic literature, including national and international journal articles, books, conference proceedings, and previous studies relevant to the themes

of ChatGPT, artificial intelligence (AI) in education, Arabic language learning, constructivist theory, and pedagogical transformation. The literature was selected based on its thematic relevance, source credibility, and alignment with the research focus. This study primarily focused on a conceptual analysis of changes in knowledge construction and pedagogical transformation in Arabic language learning in the digital era (Nafilah et al., 2024).

The literature was selected based on three inclusion criteria: (1) thematic relevance to the research focus, (2) source credibility, as indicated by publications indexed in Scopus, Web of Science (WoS), or SINTA, and (3) the recency of the sources, covering the period from 2019 to 2025, with the exception of seminal theoretical works. Data were collected through document analysis and a systematic literature search using digital academic databases, including Google Scholar, SINTA, and Scopus. The data were analyzed using Krippendorff's (2019) content analysis approach, involving the processes of data identification, classification, interpretation, and meaning construction. To ensure the trustworthiness of the findings, source triangulation was employed by comparing and cross-validating evidence from multiple relevant academic sources (Susanto et al., 2023).

RESULT AND DISCUSSION

Based on the results of the content analysis of relevant academic literature, this study identified three major themes that reflect changes in knowledge construction and pedagogical transformation in Arabic language learning in the ChatGPT era. These themes include: (1) knowledge construction in Arabic language learning in the ChatGPT era; (2) the opportunities offered by ChatGPT for Arabic language learning; and (3) pedagogical transformations resulting from the integration of ChatGPT into the learning process.

Because this study uses library research, the data presented in the Results and Discussion are not respondent scores or experimental measurements. The analytical data consist of findings, arguments, and pedagogical implications extracted from the selected academic literature according to the inclusion criteria stated in the Method section. The analysis followed four stages: identification of relevant statements, classification into thematic codes, interpretation of relationships among codes, and construction of meaning. To make the relationship between the methodological criteria and the reported findings explicit, Table 1 presents a traceability matrix of key literature sources that directly informed the three research questions.

The matrix shows that the findings are derived from converging strands of literature rather than from a single source. Studies on language learning provide evidence concerning interaction, feedback, autonomy, and writing support, while higher-education and AI-ethics

literature contributes evidence about pedagogical roles, reliability, and responsible use. The thematic synthesis therefore connects three levels of analysis: the micro level of student-AI interaction, the meso level of learning activities and assessment, and the macro level of pedagogical and curricular transformation. This structure is consistent with the research questions because the first theme explains how knowledge is constructed, the second identifies the educational opportunities that emerge from that construction, and the third interprets the changes required in teaching and curriculum.

The traceability of the findings also clarifies the meaning of "data" in this qualitative library study. A statement is treated as analytical data when it is relevant to ChatGPT or generative AI in language education, comes from a source meeting the stated credibility and recency requirements, and contributes directly to one of the three research questions. Sources that function only as seminal theoretical foundations, such as Vygotsky (1978) and Siemens (2005), are used for interpretation rather than as contemporary evidence. Thus, the results distinguish between evidence extracted from recent literature and theoretical concepts used to explain that evidence.

Table 1: Literature Evidence and Thematic Mapping of the Reviewed Studies

Source	Main focus in the literature	Evidence extracted for this study	Theme / RQ
Wahyudi & Sulaeman (2023)	ChatGPT use in Arabic students' academic activities	ChatGPT supports information search, translation, writing, and academic tasks, establishing the practical context for AI-mediated learning.	RQ1–RQ2
Kohnke et al. (2023)	ChatGPT for language teaching and learning	AI chatbot interaction can expand language-practice opportunities and learner engagement, supporting dialogical and autonomous practice.	RQ1–RQ2

Godwin-Jones (2022)	AI-supported writing and language learning	AI can provide responsive assistance and language-focused feedback, supporting reflection on language use.	RQ1
Ranalli (2021)	Automated writing evaluation and learner interaction	Repeated interaction with automated feedback can support reflection on language form and revision.	RQ1
Susiawati et al. (2025)	Constructivism and Arabic learning in the digital era	Digital mediation can support active knowledge construction through interaction with learning resources.	RQ1
Godwin-Jones (2023)	AI and language learning	AI-supported interaction can provide accessible and interactive language input, relevant to personalized practice and simulated communication.	RQ2
Xiao & Zhi (2023)	ChatGPT in foreign-language learning and teaching	The literature identifies opportunities for personalization, interaction, and autonomous language learning, alongside responsible-use concerns.	RQ2

Imran & Almusharr af (2023)	ChatGPT as an academic writing assistant	Generative AI can support brainstorming, drafting, organization, and revision when used critically and responsibly.	RQ2
Bhullar et al. (2024)	ChatGPT in higher education	AI adoption is associated with changing learning practices and implications for higher-education pedagogy and academic roles.	RQ2-RQ3
Agustini (2023)	ChatGPT and learning autonomy	AI-supported learning can strengthen learner autonomy when students actively manage and evaluate their learning process.	RQ3
Tlili et al. (2023)	Chatbots in education: opportunities and risks	Generative AI offers educational opportunities but also creates risks related to reliability, dependency, and pedagogical control.	RQ3
UNESCO (2023)	Guidance for generative AI in education and research	AI integration requires human oversight, responsible use, and adaptation of educational practices and assessment.	RQ3

Knowledge Construction in Arabic Language Learning in the Era of ChatGPT

The analysis results show that knowledge construction in Arabic language learning in the ChatGPT era occurs through adaptive, dialogical, and instant feedback-based interaction patterns. These interactions not only help students understand learning materials but also influence the way they construct understanding and reflect on Arabic language knowledge more independently. The findings indicate that the use of ChatGPT introduces a new learning mechanism that differs from conventional learning patterns.

Table 2: Mechanisms of ChatGPT-Based Knowledge Construction

Mechanism	Description	Knowledge Construction Indicators
Adaptive Scaffolding	ChatGPT adapts the level of explanation according to students' input.	Students can independently complete learning tasks after the interaction process.
Dialogical Practice	Simulations of Modern Standard Arabic conversations in various contexts	Enhancement of speaking confidence and fluency
Instant Feedback	Real-time grammatical correction and sentence improvement suggestions	Internalization of Arabic Grammar (Nahwu and Sharf) Rules through Corrective Repetition
Vocabulary Exploration	Contextual explanations of word meanings, synonyms, antonyms, and derivations	Enrichment of students' active and productive Arabic vocabulary repertoire

Source: Compiled from various literature sources

The findings in the table demonstrate that the use of ChatGPT not only facilitates students' understanding of Arabic learning materials but also fosters more active and autonomous learning patterns. AI-based interactions provide students with more flexible learning experiences through continuous cycles of practice, correction, and language exploration.

From the perspective of Vygotsky's (1978) social constructivism, the adaptive scaffolding provided by ChatGPT can be understood as the operationalization of the Zone of Proximal Development (ZPD) in a digital environment. ChatGPT acts as a mediator that provides responsive learning support, enabling students to develop beyond their actual level of ability (Susiawati et al., 2025). Through repeated dialogical interactions, students gain opportunities to construct their understanding of Arabic language gradually through exploration, practice, and feedback. This condition indicates that knowledge construction is no longer a one-way process but is formed through active interaction between students and technology as part of a digital learning ecosystem (Siemens, 2005).

The instant feedback mechanism contributes significantly to the improvement of students' metalinguistic awareness, namely their awareness of the structures and rules of the language being used. Through direct grammatical corrections, students not only obtain answers quickly but are also encouraged to reflect on and evaluate their use of Arabic more critically. In this context, ChatGPT functions not merely as an information provider but also as a reflective learning medium that supports the strengthening of linguistic understanding (Godwin-Jones, 2022).

Repeated interactions between students and AI technology facilitate a more autonomous learning reflection process through digital feedback obtained throughout the language learning process. This condition demonstrates that technology serves not only as an information-support tool but also as a facilitator of reflective practices in language learning (Ranalli, 2021).

Beyond facilitating linguistic understanding, AI-based interactions also encourage students to engage more actively in independent knowledge exploration. Students are no longer passive recipients of information; instead, they become accustomed to conducting clarification, evaluating responses, and reflecting on the Arabic language materials they study. This pattern demonstrates that the use of ChatGPT can contribute to the development of a more participatory and reflective learning environment.

Furthermore, these various learning mechanisms indicate that the use of ChatGPT not only influences the way students acquire information but also transforms the process of constructing understanding and experiencing Arabic language learning in a more interactive manner. Consequently, AI-based learning patterns open up new pedagogical opportunities in Arabic language education, particularly through learning personalization, increased learning flexibility, and the development of digitally mediated learning interactions.

Adaptive responses may appear to resemble individualized tutoring, but personalization does not

automatically equal pedagogical appropriateness. ChatGPT can adjust explanations to students' prompts, yet the quality of the resulting learning depends on the quality of the prompt, prior knowledge, and the student's ability to detect inaccurate or incomplete explanations. This is particularly important for Arabic because grammatical, semantic, cultural, and religious meanings can depend on context. Consequently, successful knowledge construction should not be limited to obtaining an answer from ChatGPT; it should include the ability to explain why an answer is appropriate, identify alternatives, and apply the underlying linguistic principle in a new context.

This pattern strengthens the constructivist interpretation of the findings. In a conventional information-transfer model, a learner may receive a rule or translation and then reproduce it. In an AI-mediated environment, however, the learner can request clarification, test an alternative sentence, ask for contextual examples, compare outputs, and revise a previous formulation. The learner therefore participates in meaning-making rather than merely receiving a completed answer. ChatGPT should nevertheless be understood as mediation, not as an independent source of guaranteed knowledge. The learning benefit emerges when students actively interrogate and evaluate the generated response, consistent with the critical use of AI emphasized in the literature (Kohnke et al., 2023; Xiao & Zhi, 2023).

When the four mechanisms are compared, they form a sequential learning cycle rather than isolated functions. Adaptive scaffolding provides support when students encounter difficulty; dialogical practice gives students opportunities to use the target language; instant feedback identifies discrepancies between intended and produced language; and vocabulary exploration broadens the linguistic resources available for subsequent production. The analytical significance of this sequence is that ChatGPT can mediate repeated movement between understanding, use, correction, and reconstruction. The value of AI is therefore not located only in the correctness of an individual answer but in the possibility of repeated interaction that enables learners to revise their understanding.

Opportunities for Utilizing ChatGPT in Arabic Language Learning

The integration of ChatGPT into Arabic language learning offers various pedagogical opportunities encompassing learning flexibility, personalization, and the development of digital-based competencies (Xiao & Zhi, 2023). Table 2 provides a summary of these opportunities and their corresponding pedagogical implications.

Table 3. Pedagogical Opportunities of ChatGPT in Arabic Language Learning

Opportunity Dimensions	Description	Pedagogical Implications
Personalized Learning	ChatGPT provides personalized explanations tailored to individual learning levels and needs.	Enhancing Students' Motivation and Effectiveness in Autonomous Learning
Simulation of an Arabic-Speaking Environment	Modern Standard Arabic conversation practice in various communication contexts	Addressing the Limitations of Authentic Arabic Language Environments in Indonesia
Development of Academic Writing Skills	Interactive brainstorming, drafting, and text revision	Developing Systematic and Independent Arabic Academic Writing Skills
AI-Based Formative Assessment	Identification of Language Error Patterns through Students' Interaction Logs	Supporting more responsive and adaptive learning planning
Understanding Classical Islamic Texts	Interactive Support for Arabic Tafsir, Hadith, and Fiqh Texts	Expanding students' access to classical Islamic literature
Critical Digital Literacy	Promoting Critical Evaluation and Verification of AI-Generated Information	Fostering Critical and Responsible AI Use Competencies

Source: Compiled from various literature sources

These various pedagogical opportunities demonstrate that ChatGPT can be utilized not merely as a technical support tool but also as a learning medium that facilitates more adaptive and interactive Arabic language instruction. The emergence of generative AI creates a more flexible learning environment for students to independently develop their language skills.

Among the six identified opportunities, learning personalization and the simulation of authentic Arabic-speaking environments represent the most prominent pedagogical contributions. ChatGPT's ability to provide comprehensible and interactive language input serves as a significant factor in facilitating second language acquisition, as highlighted by Godwin-Jones (2023). Moreover, Kohnke et al. (2023) reveal that interactions with AI-based chatbots can enhance students' learning motivation and increase the intensity of measurable language practice. Furthermore, the integration of generative AI into language learning contributes to the development of autonomous learning, enabling students to access language practice opportunities flexibly and independently beyond formal classroom environments (Dwivedi et al., 2023).

The use of ChatGPT can also support students in the process of academic writing by providing assistance in generating initial ideas, refining writing structures, and developing arguments in a more systematic manner. Within higher education contexts, generative AI can serve as a supportive tool for academic writing practices, provided that it is utilized critically and responsibly (Imran & Almusharraf, 2023).

Critical digital literacy consequently functions as a cross-cutting opportunity that connects all other opportunities. Students need to distinguish between linguistic assistance and authoritative knowledge, especially when using ChatGPT for classical Islamic texts or culturally sensitive topics. The literature reviewed indicates that the educational challenge is not simply whether ChatGPT should be used, but how its use is structured so that students remain responsible for verification and interpretation (Tlili et al., 2023; UNESCO, 2023). This finding provides the bridge to the third theme, because responsible AI use requires corresponding changes in lecturer roles, curriculum, and assessment.

The same principle applies to academic writing and formative assessment. AI can reduce the mechanical burden of brainstorming, drafting, and identifying recurring language errors, allowing learning activities to focus more strongly on explanation and revision (Imran & Almusharraf, 2023). Yet if students simply accept AI-generated sentences, the activity may shift from learning to product acquisition. A more productive model is to require students to compare an original text with an AI-supported revision, justify the changes, and identify suggestions that should be rejected. In this model, AI feedback becomes an object of analysis and not merely an answer key.

The simulation of Arabic-speaking environments deserves particular attention in the Indonesian context. Students may have limited opportunities to sustain Arabic interaction outside the classroom, especially when their immediate environment is predominantly Indonesian-

speaking. ChatGPT can provide an additional space for controlled conversational practice in Modern Standard Arabic. However, simulation should not be equated with an authentic social environment. AI-generated dialogue can approximate communicative situations, but it cannot fully reproduce the cultural, pragmatic, and interpersonal complexity of interaction with Arabic speakers. Its strongest function is therefore supplementary practice that prepares students for, rather than replaces, real communicative experiences.

The opportunities identified in the synthesis can be differentiated according to the learning function they serve. Personalized learning and simulated Arabic-speaking environments primarily expand access to input and practice. Academic writing support and AI-based formative assessment primarily assist production, revision, and feedback. Support for classical Islamic texts expands access to specialized language materials, whereas critical digital literacy provides the control mechanism needed to evaluate AI outputs. The pedagogical value of ChatGPT is therefore multidimensional: it can support language development and the competencies required to use digital information responsibly.

These opportunities not only offer technical advantages but also create broader possibilities for transforming learning interaction patterns: students' learning approaches are evolving, interactions are becoming increasingly flexible, and the role of lecturers in the learning process is undergoing transformation. Beyond providing technical support, the use of ChatGPT has begun to reshape students' learning interaction patterns and redefine the role of lecturers in Arabic language education.

Pedagogical Transformation of Arabic Language Learning in the Era of ChatGPT

The third theme concerns the pedagogical transformation emerging from the integration of ChatGPT into Arabic language learning. The most significant change identified is the shift from a teacher-centered learning model toward an AI-supported student-centered learning approach. Within this new paradigm, students are no longer positioned merely as passive recipients of information; instead, they become active agents in constructing knowledge through independent interactions with AI technology (Agustini, 2023). This transformation also reshapes students' learning behaviors in Arabic language education. Students increasingly engage in independent exploration of learning materials and become accustomed to incorporating digital technologies as integral components of the learning process. This condition demonstrates that AI utilization can foster a more flexible learning culture within higher education settings (Bhullar et al., 2024). Consequently, the learning process becomes more autonomous, interactive, and

aligned with 21st-century competencies, emphasizing self-directed learning, critical thinking, and digital literacy.

The emergence of ChatGPT also necessitates a reconstruction of the educator's role. Lecturers are no longer positioned solely as knowledge transmitters but also serve as learning facilitators, AI-use guides, and mentors who support students in validating AI-generated information. This latter function is particularly crucial within the context of Arabic language learning grounded in Islamic values. While ChatGPT is capable of generating grammatically appropriate responses, it remains limited in comprehending the cultural dimensions and Islamic scholarly contexts embedded in the Arabic language. Therefore, lecturers maintain a central role in verifying, guiding, and contextualizing AI-generated outputs to ensure their alignment with academic standards and Islamic intellectual traditions (Yong Zhao, 2021).

From a curricular perspective, the integration of ChatGPT necessitates several adjustments, including the incorporation of AI literacy components into Arabic language learning, the development of process-oriented assignment models rather than merely assessing final products, and the implementation of assessment systems capable of evaluating authentic language competencies in the era of AI-assisted learning (UNESCO, 2023; Kasneci et al., 2023).

Beyond its influence on the learning process, the use of ChatGPT also drives changes in the evaluation system of Arabic language learning. Assessment is no longer oriented solely toward the final products of assignments but also considers students' cognitive processes, reflective capacities, and the authenticity of their understanding of the learning materials. In this context, lecturers need to develop more authentic assessment models to ensure that AI utilization continues to support learning objectives while maintaining students' academic integrity.

These pedagogical changes indicate that the integration of ChatGPT extends beyond technological adoption, representing a fundamental shift in how knowledge is constructed within Arabic language learning. From a constructivist perspective (Piaget, 1970; Vygotsky, 1978), this transformation demonstrates that the learning process occurs through active interactions among students, technology, and the learning environment. ChatGPT functions as an adaptive learning resource that provides diverse information and learning alternatives, while students construct their understanding through processes of exploration, reflection, and validation of the information they obtain. Therefore, Arabic language learning in the AI era is no longer understood merely as a process of knowledge transfer from lecturers to students, but rather as a process of *co-construction of knowledge* supported by AI technology. Accordingly, AI should be regarded as a pedagogical partner rather than a

replacement for lecturers. Lecturers remain indispensable in guiding students to critically evaluate, contextualize, and validate AI-generated knowledge, ensuring that learning outcomes remain accurate, contextually appropriate, and aligned with academic standards and Islamic educational values.

Despite these pedagogical benefits, the integration of ChatGPT also presents several challenges that require careful consideration. First, regarding information accuracy, ChatGPT remains susceptible to generating inaccurate or contextually inappropriate responses, particularly in Islamic scholarly domains such as *fiqh*, *tafsir*, and *hadith*. Second, limitations remain in its ability to comprehend cultural and religious contexts, partly due to the dominance of Western-oriented language resources within AI training datasets. Third, excessive dependence on AI may potentially diminish students' critical thinking skills and learning autonomy. Unregulated reliance on generative AI may further reduce students' problem-solving abilities and academic reflection when not accompanied by sufficient pedagogical supervision (Tlili et al., 2023; Cotton et al., 2023). Therefore, the integration of ChatGPT in education should be approached critically and proportionally to ensure that its use remains aligned with pedagogical objectives and academic values. These conditions indicate that AI integration in education not only offers opportunities for enhanced learning but also requires stronger pedagogical preparedness and academic ethical considerations in its implementation (Gill et al., 2024).

Nevertheless, the literature-based nature of this study requires the findings to be interpreted as a conceptual synthesis rather than as evidence of a uniform effect on all Arabic learners. The reviewed studies differ in educational context, learning objective, and type of AI use. The present findings therefore identify recurring pedagogical patterns and their theoretical implications, but they do not establish causal effects on students' proficiency or guarantee positive outcomes in every classroom. This limitation reinforces the need for empirical follow-up studies in Indonesian Islamic higher-education settings, particularly studies that examine actual student-AI interaction, lecturer mediation, and changes in Arabic language performance.

The synthesis further suggests a practical model of AI-mediated Arabic learning consisting of four connected stages: guided prompting, critical interaction, verification, and independent production. In the first stage, lecturers or learning materials establish the task and appropriate prompt boundaries. In the second, students interact with ChatGPT to explore explanations, examples, or simulated communication. In the third, students verify important outputs against textbooks, scholarly sources, lecturer feedback, or other authoritative references. In the fourth, students produce an independent response that

demonstrates their own understanding. This model translates the conceptual findings into a pedagogical sequence while maintaining the lecturer's role as facilitator and validator.

The reconstructed lecturer role also has direct implications for assessment. If students can obtain polished text or immediate answers from generative AI, assessments that focus exclusively on final products provide limited evidence of individual learning. The findings instead support process-oriented assessment, such as annotated drafts, reflective explanations, oral follow-up, source verification, error analysis, and revision histories. For Arabic language learning, such assessment can evaluate not only whether a sentence is correct but whether students understand its grammatical structure, semantic choice, and communicative context. This approach is compatible with the constructivist interpretation because the assessment captures the process through which students construct and validate meaning.

Taken together, the findings indicate that pedagogical transformation should be understood as a redesign of learning processes rather than a simple replacement of conventional tools. The shift toward student-centered learning becomes meaningful when students are given structured opportunities to formulate questions, test linguistic hypotheses, compare AI outputs with authoritative sources, and articulate the reasoning behind their final answers. Lecturers remain responsible for designing learning tasks and establishing standards of evidence, while AI expands the range and speed of available learning interactions. This division of responsibility preserves the human pedagogical function while taking advantage of AI's capacity for immediate and iterative support.

CONCLUSION

This study generates three main conclusions. First, knowledge construction in Arabic language learning in the ChatGPT era takes place through four key mechanisms: adaptive scaffolding, dialogical practice, instant feedback, and vocabulary exploration. These mechanisms correspond with Vygotsky's concept of the Zone of Proximal Development (ZPD), demonstrating that ChatGPT serves as a learning mediator that facilitates students' active and independent knowledge construction. Second, the integration of ChatGPT offers six significant pedagogical opportunities: personalized learning, the simulation of authentic Arabic-speaking environments, the development of academic writing skills, AI-based formative assessment, enhanced understanding of classical Islamic texts, and the cultivation of critical digital literacy. These opportunities have the potential to enhance the quality of Arabic language education, particularly by addressing the limitations of authentic Arabic-speaking environments in Indonesia.

Third, the integration of ChatGPT promotes pedagogical transformation, characterized by a paradigm shift from teacher-centered learning toward AI-supported student-centered learning, the reconstruction of lecturers' roles as critical facilitators, validators of AI-generated outputs, and cultural mediators, as well as the necessity for curriculum reconstruction that is responsive to technological advancement. These findings confirm that ChatGPT functions not merely as a supplementary learning tool but has become an integral component of changing learning patterns in the digital era. Nevertheless, the implementation of ChatGPT in Arabic language learning requires appropriate pedagogical oversight to ensure that AI does not replace students' critical thinking processes. Therefore, maintaining a balance between AI utilization and the educator's role is crucial for safeguarding the quality and academic integrity of Arabic language learning in the digital era.

The findings of this study further imply that the integration of ChatGPT in Arabic language learning should be accompanied by a pedagogical framework that emphasizes critical engagement, reflective learning, and academic integrity. ChatGPT should not be positioned as an autonomous source of knowledge, but as a digital mediator whose effectiveness depends on how students interact with, evaluate, and contextualize the information generated. In this regard, Arabic language lecturers have an important role in designing learning activities that require students to verify AI-generated responses, compare them with authoritative Arabic linguistic and Islamic sources, and demonstrate their own reasoning processes. Such an approach can ensure that the use of AI contributes to meaningful knowledge construction rather than merely accelerating the completion of learning tasks. Furthermore, the conceptual contribution of this study lies in positioning ChatGPT within a constructivist perspective as part of a broader learning ecosystem rather than merely as a technological instrument. The integration of AI can support the development of more flexible, personalized, and interactive Arabic language learning, provided that its implementation remains guided by clear pedagogical objectives and ethical principles. Therefore, higher education institutions need to develop institutional policies, AI literacy programs, and assessment models that accommodate technological developments while preserving students' linguistic competence, critical thinking, autonomy, and academic integrity. In the context of Arabic language education, this balanced approach is particularly important to ensure that technological innovation strengthens, rather than replaces, the human and pedagogical dimensions of learning.

Future studies are recommended to empirically examine the implementation of ChatGPT-based knowledge construction through ethnographic approaches or case studies within Islamic educational institutions to gain a more contextualized understanding of the actual impacts of AI integration in Arabic language learning.

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