



## Instructional Design for Impactful Arabic Speaking Instruction through AI-Assisted Learning and a Deep Learning Approach

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### ABSTRACT

This study aimed to develop an instructional design for impactful Arabic speaking instruction through AI-Assisted Learning and a Deep Learning approach. The study was conducted at the Arabic Language Education Study Program, Faculty of Languages and Arts, Universitas Negeri Jakarta, during the 2025/2026 academic year. The population consisted of first-year students enrolled in the *Kalam lil Muftadi* course, with a sample of 50 students selected for the needs analysis. This study employed the Design and Development Research (DDR) model, focusing on the analysis and design phases. Data were collected using questionnaires, classroom observations, semi-structured interviews, and document analysis. Quantitative data from the questionnaires were analyzed using descriptive statistics in the form of frequencies and percentages, while qualitative data from observations, interviews, and document analysis were analyzed through data reduction, categorization, and interpretation to identify instructional requirements. The results produced an instructional design framework that systematically integrates Course Learning Outcomes (CPMK), the Deep Learning phases of Understanding, Applying, and Reflecting, AI-Assisted Learning as a pedagogical learning partner, Story-Based Learning as a contextual learning environment, and authentic assessment into a coherent instructional system. The framework was implemented through an interactive digital module that provides contextual learning experiences, AI-assisted speaking practice, reflective learning activities, and authentic speaking projects to support impactful Arabic speaking instruction.

*Keywords:* instructional design, Arabic speaking instruction, AI-assisted learning, deep learning

### INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has fundamentally transformed the educational landscape by reshaping how learners acquire knowledge, engage with learning resources, and develop more personalized and adaptive learning experiences (Isdayani et al., 2024; Muslimin, 2025). Rather than being viewed solely as a technological innovation, AI has evolved into an integral component of modern educational ecosystems, supporting learning through timely feedback, personalized instructional pathways, and interactive learner-centered environments (Fajriati et al., 2024). This

transformation has accelerated a paradigm shift from teacher-centered instruction toward learner-centered learning, where students actively construct knowledge while educators assume the role of facilitators who strategically integrate digital technologies to create engaging, adaptive, and innovative learning experiences (Hermanto et al., 2024; Rahma et al., 2025). In higher education, the integration of AI has become increasingly important as it enables more flexible and adaptive learning by personalizing instructional content, accommodating diverse learning needs, and fostering meaningful learning experiences.

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Furthermore, combining AI with a Deep Learning approach encourages students not only to acquire knowledge but also to develop deeper conceptual understanding, strengthen critical thinking skills, and cultivate the competencies required to address the challenges of the twenty-first century (Rahmawati et al., 2025; Rissi & Sinaga, 2025).

The growing integration of Artificial Intelligence (AI) into education has given rise to the paradigm of AI-Assisted Learning, an instructional approach that positions AI as a learning partner to support more personalized, adaptive, and learner-centered learning experiences (Pham et al., 2023). Within this paradigm, AI is not intended to replace the role of educators; rather, it functions as an intelligent support system that provides personalized learning pathways, delivers real-time feedback, facilitates self-reflection and independent improvement, and promotes more interactive learning experiences tailored to individual learners' needs. Nevertheless, the use of AI should be implemented in a balanced and pedagogically appropriate manner to ensure that it continues to foster learners' active engagement in knowledge construction and the development of critical thinking skills rather than encouraging passive dependence on technology (Alangari, 2025; Çela et al., 2024). Through these characteristics, AI-Assisted Learning creates a more supportive learning environment by enhancing learners' motivation, strengthening knowledge acquisition, and promoting meaningful learning through continuous interaction and feedback. Therefore, AI should be positioned as a tool that enriches and facilitates the learning process rather than as a substitute for the cognitive processes of thinking and problem-solving, which remain the primary objectives of education (Çela et al., 2024; Chen & Gong, 2025).

Although AI-Assisted Learning has demonstrated considerable potential in enhancing the personalization and effectiveness of learning, the integration of technology alone is insufficient to create learning experiences that are truly deep and meaningful. Therefore, the implementation of

AI should be supported by a pedagogical paradigm that enables learners to develop comprehensive understanding rather than merely acquire information efficiently (Santoso, 2025). One of the emerging pedagogical paradigms in Indonesian educational policy is the Deep Learning approach, which emphasizes mindful, meaningful, and joyful learning experiences. This approach encourages learners not only to memorize content but also to develop conceptual understanding, internalize knowledge, and connect what they learn with their prior experiences and real-world contexts (Haditsa et al., 2025). Through this pedagogical orientation, learning is designed to foster higher-order thinking skills, promote active learner engagement, and facilitate the application of knowledge in authentic situations as part of developing twenty-first-century competencies. Accordingly, Deep Learning should not be viewed as a new curriculum but rather as a pedagogical approach that enhances the quality of learning through reflective, contextual, and competency-oriented learning experiences (Fatmawati, 2025).

Building upon these principles, the Deep Learning approach aims to foster impactful learning, an educational orientation that extends beyond knowledge acquisition to promote meaningful development across learners' cognitive, affective, and psychomotor domains through reflective, meaningful, and enjoyable learning experiences (Sujinem, 2025). In this context, impactful learning is understood as a pedagogical approach that connects the learning process with the development of learners' attitudes, values, life skills, critical thinking abilities, social awareness, and the internalization of humanitarian values (Yoma, 2025). Accordingly, learners are positioned as active participants who construct knowledge through authentic learning experiences, relate concepts to real-world contexts, develop self-regulation, collaborate with others, and demonstrate social responsibility throughout the learning process (Arsalim et al., 2025). Consequently, learning success is no longer measured solely by academic achievement but also



by learners' motivation, active engagement, critical thinking, social competencies, and their ability to transfer acquired knowledge and skills to authentic real-life situations. In practice, impactful learning requires continuous reflection, evidence-informed feedback, and systematic evaluation to promote contextual, adaptive, and sustainable learning transformation (Syahrir & Adiansha, 2025). Therefore, impactful learning represents the ultimate goal of the Deep Learning approach by integrating knowledge, skills, character development, and reflective practice into a holistic learning experience that prepares learners to meet the challenges of the twenty-first century.

Arabic speaking proficiency (*maharah al-kalām*) is one of the productive language skills and serves as a key indicator of successful Arabic language learning, as it reflects learners' ability to express ideas, information, experiences, and feelings orally using appropriate linguistic structures to communicate effectively with others (Ulhaq & Lubis, 2023). Among the four language skills, *maharah al-kalām* is considered one of the most challenging to master because it requires not only adequate vocabulary, grammatical competence, and accurate pronunciation but also continuous practice through authentic communicative interactions. Furthermore, speaking proficiency develops upon listening comprehension (*maharah al-istimā'*), making these two skills closely interconnected in the process of language acquisition (Hapid, 2023; Zuliatin, 2023). In higher education, Arabic speaking proficiency extends beyond linguistic competence and encompasses learners' ability to communicate ideas coherently, demonstrate fluency, produce accurate pronunciation, employ appropriate vocabulary, and maintain content coherence during oral communication (Haniefah & Samsudin, 2025). Despite its importance, Arabic speaking instruction continues to face numerous challenges arising from both internal factors, such as limited vocabulary, insufficient phonological competence, and low learning motivation, and

external factors, including limited opportunities for authentic speaking practice, unsupportive learning environments, and inadequate instructional support. These challenges highlight the need for an instructional design that promotes active, authentic, and sustainable learning experiences to facilitate the development of Arabic speaking proficiency (Maulana Putra et al., 2024).

The needs analysis conducted among first-year students in the Arabic Language Education Study Program at Universitas Negeri Jakarta revealed that Arabic speaking instruction continues to face several challenges that hinder the achievement of the expected learning outcomes. Questionnaire data collected from 50 students indicated that 72% experienced limited vocabulary knowledge, 68% reported difficulties with pronunciation, and 87% stated that they had insufficient opportunities to actively practice speaking Arabic during classroom instruction. Beyond these linguistic challenges, the needs analysis also revealed that the existing instructional materials remain predominantly conventional and content-oriented, with limited support for digital learning, authentic communicative activities, and adaptive, interactive, and learner-centered learning experiences. As a result, the instructional process tends to promote surface learning, in which students primarily memorize content rather than develop deep conceptual understanding and apply their knowledge in authentic communicative contexts. These findings were further supported by classroom observations, instructional material analysis, and semi-structured interviews with the lecturer of the *Kalam lil Muftadi'* course, which indicated that the existing instructional design has not systematically integrated the principles of AI-Assisted Learning, the Deep Learning approach, and the orientation of impactful learning into Arabic speaking instruction. Yet, the integration of these three components is essential for creating personalized, reflective, contextual, and competency-oriented learning experiences that

prepare students for the demands of the twenty-first century. Therefore, an instructional design is needed to serve as the foundation for integrating AI-Assisted Learning and a Deep Learning approach into impactful Arabic speaking instruction that is meaningful, relevant, and responsive to students' learning needs.

Previous studies have consistently demonstrated that the integration of digital technologies can enhance the quality of Arabic speaking instruction by creating more interactive and adaptive learning environments. For instance, the implementation of web-based Computer-Assisted Language Learning (CALL) has been shown to significantly improve university students' Arabic speaking proficiency in terms of fluency, pronunciation, vocabulary, and content coherence (Haniefia & Samsudin, 2025). Similarly, other studies have reported that the use of various instructional models and digital learning media contributes to the development of learners' speaking skills, highlighting the potential of educational technologies to foster more active, engaging, and communicative learning experiences (Sopyanti et al., 2026).

Alongside the rapid advancement of digital technologies, Artificial Intelligence (AI) has increasingly been integrated into educational practices, giving rise to the paradigm of AI-Assisted Learning. This approach positions AI as a learning partner that supports personalized, adaptive, and learner-centered learning by providing real-time feedback and individualized learning experiences. Previous studies have demonstrated that AI-Assisted Learning enhances learners' motivation, enriches learning experiences, and promotes self-directed learning through personalized instructional support and continuous learning assistance (Joseph et al., 2024; Wu et al., 2022). In the context of language education, the integration of AI has also been shown to improve speaking proficiency by facilitating more interactive and contextually

meaningful communicative practice (Haniefia et al., 2025). Nevertheless, existing studies have primarily positioned AI as a technological tool to support instruction rather than integrating it into a systematic instructional design framework. More recent research has begun to combine Artificial Intelligence with the Deep Learning approach to further enhance the quality of teaching and learning. Evidence suggests that the Deep Learning approach fosters mindful, meaningful, and joyful learning experiences, thereby strengthening critical thinking, encouraging active learner engagement, and enabling learners to connect academic knowledge with real-world contexts (Setiawan et al., 2025). Likewise, the implementation of AI-based Deep Learning has shown promising results in improving learners' competencies through more learner-centered instructional practices. Despite these positive outcomes, its implementation continues to face several challenges, including educators' readiness, the effective integration of technology, and practical constraints in classroom implementation (Afwan et al., 2025; Agnes et al., 2026).

Ideally, the Course Learning Outcomes (CPMK) of the *Kalam lil Muftadi*' course require students to develop Arabic speaking proficiency through accurate, active, and contextually appropriate oral communication, enabling them to express ideas, experiences, and information effectively across diverse communicative situations. Achieving these learning outcomes requires an instructional process that aligns with the principles of the Deep Learning approach, emphasizes impactful learning, and is supported by an instructional design that pedagogically integrates digital technologies into the learning process. However, current instructional practices remain largely dominated by conventional teaching approaches that have yet to fully support personalized learning, authentic communicative practice, reflective learning, or the systematic integration of AI as a learning partner.



Consequently, a gap exists between the competencies specified in the Course Learning Outcomes and the actual competencies demonstrated by students, particularly in terms of fluency, pronunciation, vocabulary mastery, and the ability to use Arabic appropriately in authentic communicative contexts. This discrepancy suggests that the primary challenge lies not merely in the availability of instructional media or teaching materials, but in the absence of an instructional design that systematically aligns the Course Learning Outcomes, the characteristics of AI-Assisted Learning, the principles of the Deep Learning approach, and the orientation of impactful learning to support the development of Arabic speaking proficiency. Based on these conditions, this study addresses the following research question: How can an instructional design for impactful Arabic speaking instruction be developed through AI-Assisted Learning and a Deep Learning approach?

To address this research gap, the present study proposes a novel instructional design that integrates AI-Assisted Learning as a learning partner, the Deep Learning approach as its pedagogical foundation, and the principles of impactful learning within a unified framework for Arabic speaking instruction. Unlike previous studies, which have primarily focused on developing digital learning media, interactive modules, or employing AI as a technological support tool, this study conceptualizes AI-Assisted Learning, the Deep Learning approach, and impactful learning as interrelated components within a comprehensive instructional design framework to facilitate more meaningful learning outcomes. In line with the research question, this study aims to develop an instructional design for impactful Arabic speaking instruction through AI-Assisted Learning and a Deep Learning approach for first-year students in the Arabic Language Education Study Program at Universitas Negeri Jakarta. Theoretically, the findings are expected

to enrich the body of knowledge on AI-Assisted Learning-based instructional design and the application of the Deep Learning approach in Arabic language education. Practically, the proposed instructional design is expected to serve as a pedagogical reference for lecturers in designing more adaptive, meaningful, and impactful Arabic speaking instruction, while also providing a foundation for the future development of AI-assisted interactive digital learning resources.

## METHOD

This study employed a Design and Development Research (DDR) approach, which is widely used for developing educational products and instructional innovations. Unlike experimental research that primarily examines the effectiveness of interventions, DDR focuses on producing educational products grounded in theory and empirical evidence that are valid, practical, and responsive to users' needs (Lutfiyatun et al., 2023). This article does not describe the entire development process; rather, it focuses on the Analysis and Design phases of the ADDIE model to identify instructional needs and develop an instructional design for an AI-assisted interactive digital module using a Deep Learning approach to support impactful Arabic speaking instruction. The subsequent phases of Development, Implementation, and Evaluation are beyond the scope of this study.

The Analysis phase was conducted to identify instructional needs related to Arabic speaking instruction in the *Kalam lil Muftadi'* course. Specifically, the analysis examined students' characteristics, learning practices, instructional challenges encountered by lecturers, curriculum requirements, Course Learning Outcomes (CPMK), students' expectations regarding the implementation of AI-Assisted Learning, and the pedagogical requirements for integrating the principles of Deep Learning and impactful learning into an interactive digital module. The findings of this phase served as evidence-based instructional

requirements for developing the instructional design (Spatioti et al., 2022). The Design phase focused on formulating learning objectives aligned with the CPMK, organizing instructional content, designing learning activities based on the principles of mindful, meaningful, and joyful learning, integrating AI-assisted learning features, selecting interactive multimedia components, designing authentic Arabic speaking tasks, and preparing formative and summative assessment strategies. These activities resulted in a comprehensive instructional design blueprint for the proposed interactive digital module.

The study was conducted in the Arabic Language Education Study Program, Faculty of Languages and Arts, Universitas Negeri Jakarta. The participants consisted of 50 first-year students enrolled in the *Kalam lil Mubtadi'* course during the 2025/2026 academic year. Classroom observations and semi-structured interviews were also conducted with the course lecturer and students to identify instructional challenges and learning needs. Data were collected through questionnaires, classroom observations, semi-structured interviews, and document analysis. The questionnaire was administered to identify students' difficulties and instructional needs in learning Arabic speaking. Classroom observations and interviews explored existing instructional practices, learning resources, and challenges in teaching speaking skills. Document analysis was conducted on the CPMK, Semester Learning Plan (RPS), teaching materials, and other instructional documents relevant to the instructional design process.

The collected data were analyzed descriptively according to the objectives of each research phase. Quantitative data obtained from the questionnaires were analyzed using descriptive statistics, including frequencies and percentages, to identify students' instructional needs. Qualitative data obtained from observations, interviews, and document analysis were analyzed through data

reduction, categorization, interpretation, and conclusion drawing to determine the instructional requirements. The results of the Analysis phase were subsequently used as the basis for designing the instructional framework of the proposed AI-Assisted Learning-based interactive digital module with a Deep Learning approach for impactful Arabic speaking instruction.

## RESULT

### 1. Instructional Design Framework and Constructive Alignment

The instructional design proposed in this study was developed from the results of the needs analysis and a comprehensive review of the literature on AI-Assisted Learning, the Deep Learning approach, impactful learning, and Arabic speaking instruction. Rather than combining these concepts as independent instructional elements, the proposed design integrates them into a coherent pedagogical framework that guides the development of impactful Arabic speaking instruction. The framework was designed to establish a systematic relationship among the Course Learning Outcomes (CPMK), instructional objectives, learning experiences, AI-assisted learning strategies, Story-Based Learning, learning resources, and authentic assessment. Consequently, the instructional design functions not only as a conceptual framework but also as an operational blueprint that directs the development of an interactive digital learning environment capable of supporting meaningful, contextual, reflective, and technology-enhanced Arabic speaking instruction. The needs analysis revealed that first-year students experienced several instructional challenges that limited the achievement of Arabic speaking competence. These challenges included limited opportunities for authentic speaking practice, insufficient vocabulary mastery, pronunciation difficulties, inadequate formative feedback, and learning materials that remained predominantly content-oriented and teacher-centered. In addition,



existing instructional practices had not systematically incorporated personalized learning, continuous speaking practice, reflective learning, or AI-supported instructional activities. These findings confirmed that improving Arabic speaking instruction requires more than simply introducing digital media; it requires a comprehensive instructional design capable of aligning pedagogical principles, learner characteristics, instructional technology, and expected learning outcomes within a unified learning system.

To address these challenges, the proposed instructional design framework integrates five complementary components that interact throughout the instructional process. The first component is the Course Learning Outcomes (CPMK), which establish the communicative competencies expected from learners and serve as the primary reference for determining instructional objectives, learning content, learning activities, and assessment criteria. The second component is the Deep Learning approach, which organizes the instructional process into the interconnected phases of Understanding, Applying, and Reflecting. These phases ensure that learning progresses from conceptual understanding to authentic language use and reflective improvement rather than memorization alone.

The third component is AI-Assisted Learning, which is embedded throughout the instructional process as an adaptive learning partner. Instead of functioning merely as a conversational application, AI provides personalized instructional support through interactive speaking practice, pronunciation feedback, contextual vocabulary recommendations, immediate formative feedback, and reflective guidance. These functions enable learners to practice independently while continuously receiving individualized support that complements classroom instruction.

The fourth component is Story-Based Learning, which provides the contextual

foundation for the entire instructional process. Rather than presenting isolated speaking topics, the proposed module organizes all instructional units into a continuous narrative following the academic journey of a central character. This narrative structure allows each lesson to become a continuation of the previous learning experience, enabling learners to gradually construct communicative competence through authentic situations that become increasingly complex across the instructional sequence. Story-Based Learning therefore serves not only as instructional content but also as a pedagogical strategy that strengthens contextual learning, learner engagement, and knowledge transfer.

The integration of these components is operationalized through an interactive digital module that reflects the proposed instructional design. Each instructional unit follows a consistent learning sequence beginning with clearly defined learning objectives and advance organizers that activate prior knowledge, followed by concept maps, contextual videos, vocabulary development, guided dialogues, structured speaking practice, AI-assisted conversations, reflective learning activities, authentic speaking projects, classroom presentations, and performance assessment. This systematic organization enables learners to experience a complete learning cycle in every lesson while progressively developing their Arabic speaking competence through meaningful, authentic, and technology-supported learning experiences. Rather than functioning as a collection of digital materials, the module represents the practical implementation of the proposed instructional framework in which every instructional component is intentionally designed to support the achievement of the expected learning outcomes.

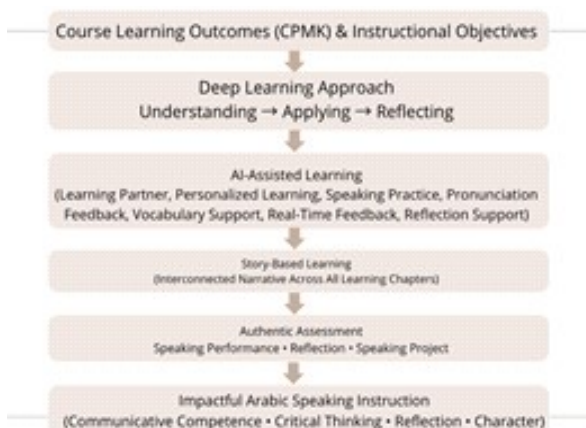


Figure 1  
Proposed Instructional Design Framework for Impactful Arabic Speaking Instruction Through AI-Assisted Learning and a Deep Learning Approach

Figure 1 illustrates the instructional design framework developed in this study. The framework begins with the alignment of the Course Learning Outcomes (CPMK) and instructional objectives, which determine the expected communicative competencies and guide the organization of learning experiences. These competencies are achieved through the Deep Learning phases of Understanding, Applying, and Reflecting, while AI-Assisted Learning provides continuous personalized support throughout the learning process. The instructional experiences are contextualized through Story-Based Learning, where all learning units are connected within a continuous narrative that promotes authentic communication and progressive competence development. Finally, authentic assessment evaluates learners' speaking performance, reflective learning, and project outcomes to ensure that the instructional process leads to impactful Arabic speaking instruction.

To ensure that the proposed framework was translated consistently into instructional practice, the instructional design was further developed through the principle of constructive alignment. Every instructional component was deliberately aligned with the Course Learning Outcomes, ensuring that instructional objectives, learning

activities, AI-assisted learning experiences, learning resources, and assessment strategies contributed directly to the intended competencies. This alignment transformed the framework from a conceptual model into a practical instructional system capable of guiding the design and implementation of the interactive digital module.

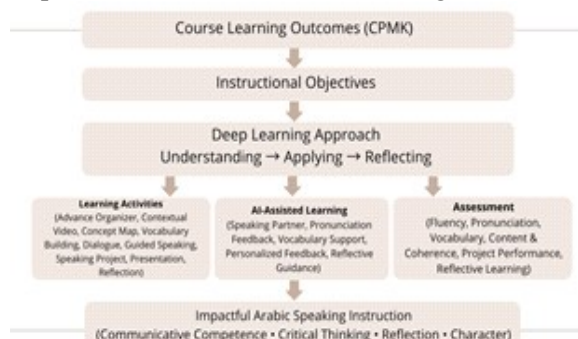


Figure 2  
Constructive Alignment of Learning Outcomes and Instructional Design

Figure 2 illustrates how constructive alignment was implemented throughout the proposed instructional design. The Course Learning Outcomes serve as the basis for formulating instructional objectives, which are operationalized through learning activities organized according to the Deep Learning cycle. Every stage is supported by AI-Assisted Learning and evaluated through authentic assessment, ensuring that learning objectives, instructional experiences, and assessment remain consistently aligned. This systematic alignment enables the interactive digital module to function as a coherent instructional system that promotes meaningful, contextual, reflective, and impactful Arabic speaking instruction.

## 2. AI-Assisted Learning Integration

Artificial Intelligence (AI) was integrated into the proposed instructional design as a pedagogical learning partner rather than merely as a technological application. Unlike many AI-supported language learning environments in which AI primarily functions as a conversational agent or automated assessment tool, the proposed



design embeds AI throughout the entire learning process to support knowledge construction, communicative practice, formative assessment, and reflective learning. Consequently, AI continuously accompanies learners before, during, and after speaking activities, providing adaptive instructional support that complements classroom instruction while maintaining the lecturer's role as the primary instructional facilitator.

Within the proposed instructional design, AI performs five complementary pedagogical roles that collectively support the development of Arabic speaking competence. First, AI functions as a Speaking Partner by providing learners with unlimited opportunities to engage in contextual Arabic conversations beyond classroom hours. Instead of relying solely on scripted dialogues, students interact with AI through authentic communicative situations in which responses are dynamically adjusted according to learners' inputs. This adaptive interaction allows students to practice spontaneous communication while gradually developing fluency and communicative confidence.

Second, AI serves as a Pronunciation Coach by providing immediate feedback on pronunciation, intonation, and articulation during speaking practice. Rather than waiting for lecturer feedback, learners receive continuous corrective support while practicing independently. The immediate nature of this feedback enables students to recognize pronunciation errors, revise their oral production, and repeat speaking tasks until achieving greater pronunciation accuracy. This continuous practice extends speaking opportunities beyond classroom instruction and promotes self-directed improvement.

Third, AI acts as a Vocabulary Assistant that supports lexical development throughout the instructional process. Instead of presenting isolated vocabulary lists, AI introduces new words within meaningful communicative contexts, recommends alternative expressions appropriate to different situations, assists learners in constructing grammatically appropriate sentences, and encourages vocabulary expansion through contextual dialogue. Consequently, vocabulary

acquisition becomes an integral part of communicative interaction rather than a separate memorization activity.

Fourth, AI functions as a provider of Formative Feedback by continuously monitoring learners' speaking performance and generating individualized responses related to fluency, vocabulary use, sentence construction, grammatical accuracy, and content organization. The feedback is designed not merely to identify errors but also to encourage learners to revise, elaborate, and improve their spoken responses through repeated interaction. This formative support enables learners to monitor their own progress while strengthening communicative competence through iterative practice.

Finally, AI operates as a Reflection Partner, supporting learners during the concluding phase of each instructional unit. Rather than simply evaluating correct and incorrect responses, AI guides students to summarize their learning, identify strengths and weaknesses, analyze their communication strategies, and formulate personal goals for subsequent learning activities. Through this reflective dialogue, learners are encouraged to develop self-regulation, metacognitive awareness, and continuous improvement, which represent essential characteristics of the Deep Learning approach implemented in the proposed instructional design.

Collectively, these five pedagogical roles position AI as an integral component of the instructional process rather than an external technological tool. The integration of conversational practice, pronunciation guidance, vocabulary support, formative feedback, and reflective learning creates a continuous cycle of personalized learning in which students receive adaptive instructional assistance throughout every stage of Arabic speaking instruction. Consequently, AI contributes not only to the improvement of linguistic performance but also to learner autonomy, communicative confidence, and reflective learning, thereby supporting the implementation of impactful Arabic speaking instruction.

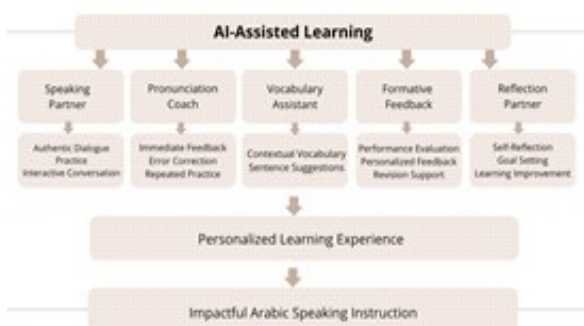


Figure 3  
Pedagogical Roles of AI-Assisted Learning in the Proposed Instructional Design

Figure 3 illustrates the pedagogical roles of AI within the proposed instructional design. Rather than functioning solely as a conversational technology, AI is integrated as a learning partner that supports learners throughout the instructional process. AI facilitates authentic speaking practice through interactive dialogue, provides immediate pronunciation feedback, assists vocabulary development in contextual situations, delivers formative feedback for continuous improvement, and guides learners in reflecting on their learning progress. The integration of these five complementary roles creates a personalized and adaptive learning environment that enhances learner autonomy, communicative competence, and reflective learning while supporting the implementation of impactful Arabic speaking instruction.

### 3. Deep Learning Implementation

The proposed instructional design operationalizes the Deep Learning approach by organizing every instructional unit into three interconnected learning phases: Understanding, Applying, and Reflecting. Rather than emphasizing the memorization of vocabulary or grammatical structures, the instructional process encourages learners to construct knowledge, actively use Arabic in authentic communicative situations, and continuously evaluate their own learning. Through this learning cycle, students progressively develop

communicative competence while simultaneously strengthening critical thinking, self-regulation, and reflective learning skills.

The Understanding phase focuses on activating learners' prior knowledge and facilitating conceptual understanding before engaging in speaking activities. Each instructional unit begins with clearly defined learning objectives, an advance organizer, contextual learning materials, videos, concept maps, and vocabulary exploration that introduce the communicative context of the lesson. These activities help learners understand the purpose of learning, recognize key linguistic elements, and establish meaningful connections between new knowledge and previous learning experiences before moving to communicative practice.

The Applying phase emphasizes the active use of Arabic through authentic and contextual communication. Learners participate in guided dialogue practice, role-playing, collaborative speaking activities, story-based communication tasks, and AI-assisted conversations that simulate real-life situations. Rather than repeating predetermined dialogues, students are encouraged to construct their own responses, negotiate meaning, solve communicative problems, and interact spontaneously with both peers and AI-assisted learning partners. This phase enables learners to transfer conceptual knowledge into meaningful communicative performance while gradually improving fluency, pronunciation, vocabulary use, and content organization.

The Reflecting phase encourages learners to evaluate both their learning process and speaking performance after completing each instructional unit. Reflection is facilitated through self-assessment activities, AI-generated formative feedback, lecturer feedback, and guided reflective questions that help learners identify their strengths, recognize areas requiring improvement, and formulate learning goals for subsequent lessons. Rather than viewing reflection as the final instructional activity, the proposed design positions reflective learning as a continuous process that

promotes learner autonomy, metacognitive awareness, and sustainable language development.

By integrating these three phases within every instructional unit, the proposed design transforms Deep Learning from a theoretical concept into a practical instructional strategy. The cyclical sequence of Understanding–Applying–Reflecting ensures that learning progresses from conceptual understanding to authentic language use and finally to reflective improvement. Consequently, learners are expected not only to acquire Arabic speaking skills but also to develop critical thinking, self-directed learning, communicative confidence, and the ability to apply their knowledge in diverse real-world contexts.

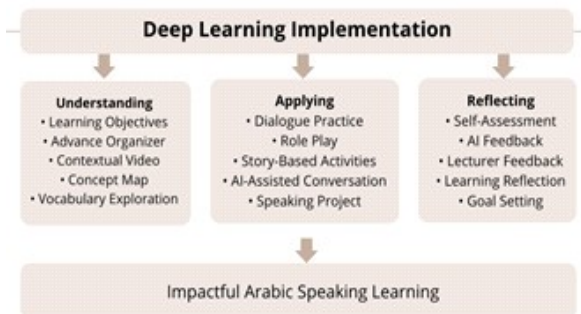


Figure 4  
Implementation of the Deep Learning Cycle

Figure 4 illustrates the implementation of the Deep Learning approach within the proposed instructional design. Each instructional unit follows a cyclical sequence of Understanding, Applying, and Reflecting, ensuring that learners first develop conceptual understanding, then apply their knowledge in authentic communicative activities, and finally evaluate their learning through reflection and formative feedback. This iterative learning cycle promotes meaningful knowledge construction, continuous improvement, and the development of impactful Arabic speaking competence.

#### 4. Story Based Learning Design

The proposed instructional design adopts Story-Based Learning as the contextual foundation for organizing Arabic speaking instruction. Rather

than presenting learning materials as isolated topics, the instructional content is structured through a continuous narrative that connects all instructional units into a coherent learning journey. This approach enables learners to develop Arabic speaking competence within meaningful communicative situations while maintaining continuity between one lesson and the next. Consequently, every instructional activity becomes part of an interconnected learning experience rather than a collection of independent speaking exercises.

The storyline follows the academic journey of a central character, Hana, whose experiences gradually develop throughout the instructional sequence. Beginning with her introduction to university life, Hana encounters various academic, social, and professional situations that require authentic communication in Arabic. Each lesson represents a continuation of the previous episode, allowing learners to follow the progression of the narrative while simultaneously expanding their communicative competence. As the story develops, the communicative situations become increasingly complex, providing learners with opportunities to apply previously acquired vocabulary, expressions, and speaking strategies in new contexts. This narrative progression encourages learners to continuously connect prior knowledge with new learning experiences.

Story-Based Learning also functions as a pedagogical scaffold that supports contextual language acquisition. Instead of memorizing vocabulary and dialogue independently, learners acquire language through situations that resemble authentic communication. Vocabulary, expressions, dialogues, speaking activities, and projects are embedded naturally within the storyline, enabling students to understand not only the linguistic forms but also the communicative purposes of language use. This contextualization promotes meaningful learning by encouraging learners to relate classroom activities to realistic social interactions and everyday communication.

Furthermore, the continuous narrative strengthens learner engagement throughout the

instructional process. Because each lesson contributes to the development of the overall story, learners are encouraged to actively participate in subsequent instructional units to discover the continuation of Hana's experiences. This continuity increases learning motivation while providing repeated opportunities to revisit previously learned vocabulary and communicative expressions in different situations. As a result, Story-Based Learning supports knowledge retention, communicative fluency, and the gradual development of Arabic speaking competence through authentic and meaningful learning experiences.

By integrating a continuous storyline into every instructional unit, the proposed instructional design transforms Story-Based Learning from a content delivery strategy into an instructional approach that connects learning objectives, communicative practice, and authentic contexts within a single learning experience. Consequently, learners are expected not only to improve their Arabic speaking proficiency but also to develop contextual understanding, communicative confidence, and the ability to transfer language skills into real-life situations, thereby reinforcing the implementation of impactful Arabic speaking instruction.



Figure 5  
Story-Based Learning Design in the Proposed Instructional Module

Figure 5 illustrates how Story-Based Learning is implemented through a continuous narrative that connects all instructional units. Rather than presenting independent speaking topics, each lesson represents a continuation of Hana's academic journey, providing learners with progressively richer communicative contexts. This narrative continuity enables learners to integrate previously acquired knowledge with new learning experiences, thereby promoting contextual language use, sustained engagement, and meaningful development of Arabic speaking competence.

## DISCUSSION

The findings of this study indicate that impactful Arabic speaking instruction cannot be achieved solely through the adoption of Artificial Intelligence, but requires a systematic instructional design that integrates pedagogy, learning objectives, instructional activities, and assessment into a coherent learning process. The proposed design combines AI-Assisted Learning, the Deep Learning approach, Story-Based Learning, and impactful learning within a unified instructional framework. This finding supports the concept of AI-Assisted Learning proposed by Pham et al. (Pham et al., 2023), which positions AI as a learning partner rather than a replacement for the instructor. It also reinforces the argument that technology should facilitate learners' active participation, critical thinking, and knowledge construction through meaningful learning experiences (Çela et al., 2024; Chen & Gong, 2025).

Beyond the integration of AI, the proposed instructional design demonstrates how the Deep Learning approach can be translated into classroom practice through the interconnected phases of Understanding, Applying, and Reflecting. This instructional sequence encourages learners to construct knowledge, apply it in authentic communicative situations, and continuously improve through reflection rather than memorizing language forms. These findings are consistent with Santoso (Santoso, 2025), who emphasizes that



technology-enhanced learning should be grounded in sound pedagogy, as well as Haditsa et al. and Fatmawati (Fatmawati, 2025; Haditsa et al., 2025), who describe Deep Learning as a pedagogical approach that promotes mindful, meaningful, and joyful learning while fostering contextual and competency-oriented learning experiences.

The implementation of the proposed design also reflects the principles of impactful learning, in which learning is expected to produce meaningful changes in learners' knowledge, skills, and attitudes. The integration of authentic speaking activities, AI-assisted feedback, and reflective learning encourages students to apply Arabic in meaningful communicative contexts while developing learner autonomy and critical thinking. This finding supports Sujinem (Sujinem, 2025), who argues that impactful learning should promote balanced cognitive, affective, and psychomotor development, and is further aligned with Yoma (Yoma, 2025) and Syahrir (Syahrir & Adiansha, 2025), who emphasize authentic learning experiences, continuous reflection, and evidence-based feedback as essential characteristics of impactful learning.

The proposed instructional design is likewise consistent with the nature of Arabic speaking instruction (*maharah al-kalām*), which emphasizes continuous practice, authentic interaction, and contextual communication. By integrating AI-assisted conversations, Story-Based Learning, and reflective speaking activities, learners are provided with repeated opportunities to use Arabic in realistic situations rather than simply memorizing vocabulary and dialogue. This supports the view of Ulhaq and Lubis (Ulhaq & Lubis, 2023) that speaking competence develops through meaningful communication, while also accommodating the key components of Arabic speaking proficiency fluency, pronunciation, vocabulary, and content coherence identified by Haniefa and Samsudin (Haniefa & Samsudin, 2025).

The primary contribution of this study lies in the development of an instructional design that systematically integrates AI-Assisted Learning, the Deep Learning approach, Story-Based Learning,

and impactful learning into a single pedagogical framework. Previous studies have generally examined these elements separately, focusing either on digital media, CALL, AI applications, or pedagogical approaches. In contrast, this study combines these complementary elements into a coherent instructional design that aligns learning outcomes, learning experiences, AI-supported activities, and authentic assessment to support impactful Arabic speaking instruction. The proposed instructional design also has practical implications for Arabic language education, particularly in higher education. The framework provides lecturers with a systematic guide for integrating AI into speaking instruction while maintaining learner-centered pedagogy and instructional coherence. In addition, it offers instructional designers a practical reference for developing interactive digital modules that combine technological innovation with sound pedagogical principles, thereby contributing to the growing body of research on AI-assisted language learning.

Despite these contributions, this study is limited to the analysis and design phases of the Design and Development Research (DDR) model. The proposed instructional design has not yet been implemented or empirically evaluated in classroom settings. Therefore, future research should continue with the development, implementation, and evaluation phases to examine the validity, usability, and effectiveness of the proposed interactive digital module in improving Arabic speaking competence. Such studies will provide stronger empirical evidence regarding the effectiveness of the proposed instructional design in authentic learning environments.

## CONCLUSION

This study successfully developed an instructional design for impactful Arabic speaking instruction through AI-Assisted Learning and a Deep Learning approach based on the analysis and design phases of the Design and Development Research (DDR) model. The proposed instructional design systematically integrates

Course Learning Outcomes (CPMK), the Deep Learning phases of Understanding, Applying, and Reflecting, AI-Assisted Learning as a pedagogical learning partner, Story-Based Learning as a contextual learning environment, and authentic assessment within a coherent instructional framework. This integration provides a structured foundation for developing an interactive digital module that supports personalized, contextual, reflective, and meaningful Arabic speaking instruction. Therefore, the proposed instructional design offers both a theoretical contribution to instructional design research and a practical framework for developing AI-supported Arabic language learning in higher education. Future research should continue with the development, implementation, and evaluation phases to examine the validity, usability, and effectiveness of the proposed instructional design in authentic learning settings.

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