Kalamuna: Jurnal Pendidikan Bahasa Arab dan Kebahasaaraban
P-ISSN: 2655-4267, E-ISSN: 2745-6943
Vol. 07, No. 2, July 2026
DOI: *https://doi.org/10.52593/klm.07.2.01*

Artificial Intelligence and Educational Psychology in Love-Based Arabic Language Learning: A Literature Review

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Keywords:
Arabic Language Learning; Artificial Intelligence; Educational Psychology; Foreign Learners; Love-Based Curriculum.

Abstract

Learning Arabic as a Foreign Language (AFL) involves linguistic, pedagogical, and affective challenges, particularly foreign language anxiety. Artificial Intelligence (AI) can support personalization and immediate feedback, yet overly technology-centered instruction may weaken human interaction. This study aims to formulate a conceptual model integrating AI, educational psychology, and a love-based curriculum for holistic, learner-centered AFL learning. A qualitative-descriptive systematic literature review examined 26 scholarly sources, comprising recent peer-reviewed studies and foundational works, retrieved from Scopus, Web of Science, ERIC, Google Scholar, Garuda, and SINTA. The sources were synthesized through Braun and Clarke's six-stage thematic analysis. The findings indicate that AI supports diagnosis, personalization, adaptive practice, and feedback; educational psychology guides motivation, emotional regulation, autonomy, competence, relatedness, and cognitive-load management; and the love-based curriculum provides an ethical foundation for empathy, psychological safety, and meaningful teacher-student relationships. The study proposes an AI-Psychology-Love Synergy Model comprising diagnosis-personalization, interactive implementation, and feedback-adaptation. The model positions AI as an assistant that strengthens, rather than replaces, the teacher's human role.

Kata kunci:
Bahasa Arab; Kecerdasan Buatan; Kurikulum Berbasis Cinta; Pembelajar Asing; Psikologi Pendidikan.

Abstrak

Pembelajaran bahasa Arab sebagai bahasa asing menghadapi tantangan linguistik, pedagogis, dan afektif, terutama kecemasan berbahasa asing. Kecerdasan Buatan (Artificial Intelligence/AI) mendukung personalisasi dan umpan balik seketika, tetapi pembelajaran yang terlalu berpusat pada teknologi berisiko melemahkan interaksi manusiawi. Penelitian ini bertujuan merumuskan model konseptual yang mengintegrasikan AI, psikologi pendidikan, dan kurikulum berbasis cinta untuk pembelajaran bahasa Arab yang holistik dan berpusat pada pembelajar. Tinjauan pustaka sistematis kualitatif-deskriptif dilakukan terhadap 26 sumber ilmiah yang mencakup studi sejawat mutakhir dan karya teoretis fundamental, yang ditelusuri melalui Scopus, Web of Science, ERIC, Google Scholar, Garuda, dan SINTA. Sumber dianalisis menggunakan enam tahap analisis tematik Braun dan Clarke. Hasil kajian menunjukkan bahwa AI mendukung diagnosis, personalisasi, latihan adaptif, dan umpan balik; psikologi pendidikan mengarahkan motivasi, regulasi emosi, otonomi, kompetensi, keterhubungan, dan pengelolaan beban kognitif; sedangkan kurikulum berbasis cinta menyediakan landasan etis berupa empati, keamanan psikologis, dan relasi guru–siswa yang bermakna. Kebaruan penelitian ialah AI-Psychology-Love Synergy Model yang mencakup diagnosis-

personalisasi, implementasi interaktif, dan umpan balik-adaptasi. Model ini menempatkan AI sebagai asisten yang memperkuat, bukan menggantikan, peran manusiawi guru.

Article Information **Submitted 2025-09-23. Received 2025-11-29. Revised 2026-07-23. Accepted 2026-07-24. Published 2026-07-31.**

INTRODUCTION

Global interest in Arabic has increased significantly over the last two decades. This growth has not only been driven by religious factors, as Arabic is the language of the *Qurʾān*, but also by economic, geopolitical, and cultural factors alongside the expanding influence of the Arab world in the international arena (Al-Batal, 2017). This phenomenon has directly increased the demand for Arabic as a Foreign Language (AFL) programs in various parts of the world. However, the learning process is not without challenges. Non-Arab learners frequently encounter substantial structural difficulties, ranging from differences in the phonological system that require precise mastery of *makhārij al-ḥurūf* (points of articulation), to the complexity of Arabic morphology (*ṣarf*) and syntax (*naḥw*), which often have no direct equivalents in many Indo-European languages (Ryding, 2013). Functional and professionally oriented AFL pedagogy likewise emphasizes communicative use across skills and deliberate integration of curriculum, materials, and context (Alosh, 2005; Wahba et al., 2006).

In addition to linguistic challenges, psychological and affective factors play a crucial role that is often overlooked. The Affective Filter Hypothesis holds that motivation, self-confidence, and anxiety can either hinder or facilitate second-language acquisition (Krashen, 1985). In the context of Arabic, which is often perceived as a difficult language, foreign language anxiety tends to be high, particularly when teaching methods are overly rigid, text-based, and unable to establish an emotional connection among learners, teachers, and the language itself (Dewaele, 2007). Classroom-specific anxiety may manifest as communication apprehension, test anxiety, and fear of negative evaluation; therefore, pedagogical responses should combine careful diagnosis with anxiety-reduction strategies (Horwitz et al., 1986; Oxford, 1999). Low motivation and a high affective filter become major obstacles that cause many learners to discontinue their learning process.

Alongside these challenges, education has entered the era of the Fourth Industrial Revolution, in which Artificial Intelligence (AI) promises a radical transformation. In language education, AI has demonstrated considerable potential through applications such as Intelligent Tutoring Systems (ITS), adaptive learning platforms, speech-recognition technology for pronunciation practice, and automated text analysis for grammatical feedback (Zawacki-Richter et al., 2019). AI offers an unprecedented scale of personalized learning by enabling instructional

materials to be adjusted to each learner's pace and learning style. Evidence published in Kalamuna further indicates that AI can strengthen willingness to communicate in Arabic by creating a supportive, interactive, and adaptive environment and by providing personalized feedback that increases learners' confidence (Said et al., 2025).

Nevertheless, the massive adoption of AI also raises new concerns. There is a risk that the automation and efficiency offered by AI may lead to the depersonalization and dehumanization of learning. Machine-mediated interaction may reduce the warmth of teacher-student relationships, an element that humanistic education scholars such as Carl Rogers regard as central to meaningful learning (Rogers & Freiberg, 1994). If not carefully designed, AI may merely reinforce mechanistic learning methods that fail to address the affective roots of language-learning difficulties.

This situation highlights the urgency of exploring alternative pedagogical paradigms that can frame the use of technology within a humanistic orientation. One relevant paradigm is the love-based curriculum. Rooted in critical pedagogy and humanistic education, this concept emphasizes compassion, empathy, appreciation, and the construction of positive relationships as the foundation of the entire educational process (hooks, 2003). In the AFL context, such a curriculum seeks to transform learners' perception of Arabic from a difficult academic subject into a living language that is loved, valued, and meaningfully experienced.

To bridge the advanced technological potential of AI and the philosophical demands of a love-based curriculum, educational psychology becomes an essential connecting discipline. Educational psychology provides a scientific framework for understanding how learners learn, what motivates them (for example, Deci and Ryan's Self-Determination Theory), how they process information (for example, Cognitive Load Theory), and how emotions influence learning. These principles can be integrated into AI algorithm design and instructional strategies to ensure that technological interventions are aligned with learners' psychological conditions.

Based on the background described above, this literature review is designed to explore several key questions related to Arabic learning for foreign learners. First, it examines how recent literature defines the challenges and opportunities of Arabic learning, especially those related to technological and psychological dimensions. Second, it investigates how the concept of a love-based curriculum, rooted in humanistic education, can be operationalized in Arabic teaching practice to address affective barriers such as language anxiety. Furthermore, the study explains how the roles and applications of Artificial Intelligence and the principles of educational psychology can be theoretically integrated to strengthen the implementation of a

love-based curriculum. Finally, this study aims to formulate a synergistic conceptual model that combines AI, educational psychology, and a love-based curriculum into a holistic, coherent, and humanistic framework for Arabic language learning.

Thus, there is an urgent conceptual and practical gap to be addressed: how can the analytical and adaptive power of Artificial Intelligence, the empirical foundations of educational psychology, and the philosophical foundation of a love-based curriculum be synergized to create an Arabic learning model for foreign learners that is not only cognitively effective but also affectively healthy and intrinsically motivating?

METHOD

This study employed a qualitative-descriptive approach using a Systematic Literature Review (SLR) to identify, evaluate, and synthesize scholarship on Artificial Intelligence (AI) in language education, educational psychology, Arabic as a Foreign Language (AFL), and love-oriented humanistic pedagogy. The approach was selected to provide a comprehensive account of conceptual developments, research trends, and literature gaps that could inform the development of a new conceptual model. The review stages comprised formulating research questions, identifying data sources, selecting literature, extracting data, conducting thematic analysis, and developing a conceptual synthesis.

Literature was retrieved from international databases—Scopus, Web of Science, ERIC, and Google Scholar—and national databases—Garuda and SINTA. The search combined Indonesian and English terms, including 'Artificial Intelligence', 'AI in language learning', 'educational psychology', 'Arabic as a Foreign Language', 'humanistic pedagogy', 'love-based curriculum', 'pembelajaran bahasa Arab', and 'psikologi pendidikan'. Records were screened against predetermined inclusion and exclusion criteria. Eligible sources comprised peer-reviewed studies published between 2010 and 2025 and earlier seminal academic works retained for theoretical framing; all sources had to be available in full text and substantively relevant to the study focus. Duplicates, non-academic publications, and off-topic records were excluded.

Following screening and full-text assessment, 26 sources were retained for in-depth synthesis. The review workflow is summarized in Figure 1. The selected literature was analyzed using a six-stage thematic procedure (Braun & Clarke, 2006): data familiarization, initial coding, theme searching, theme reviewing, defining and naming themes, and reporting the findings. The analysis was iterative, allowing patterns from AI, educational psychology, AFL, and love-based education to be compared and integrated into the proposed conceptual model.

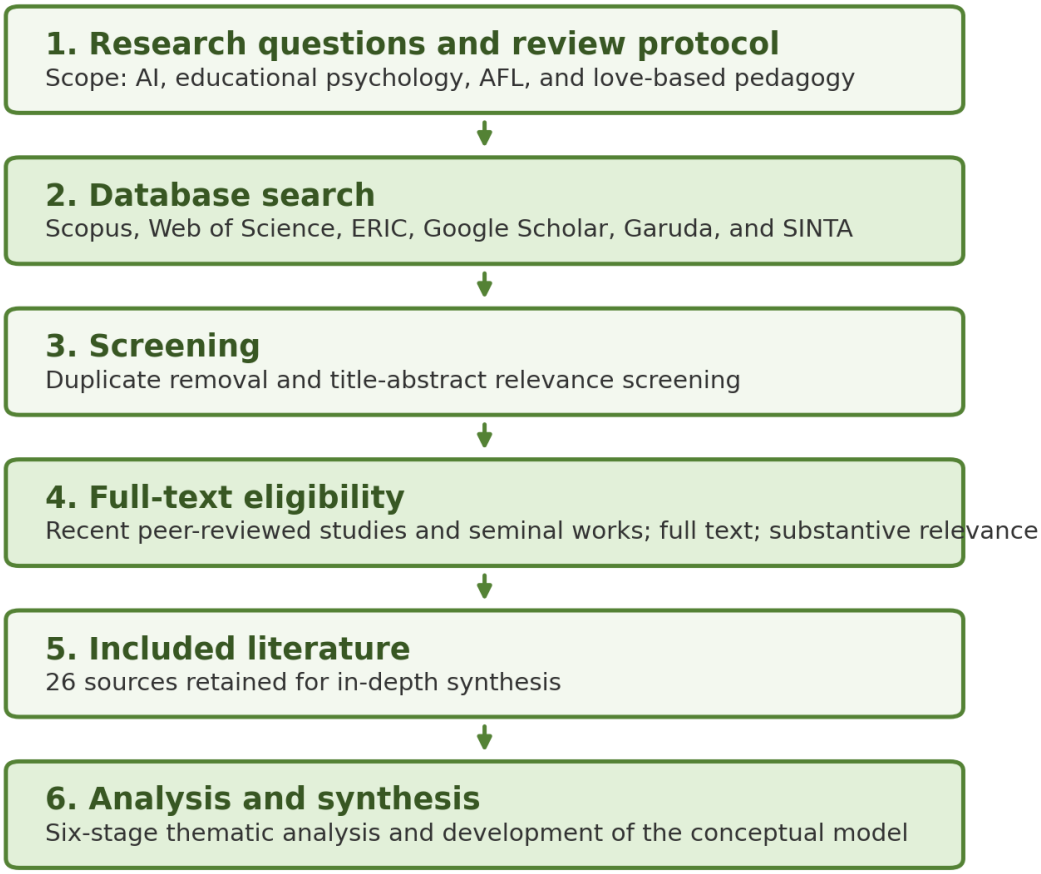

Figure 1. *Systematic literature review and thematic synthesis workflow.*

RESULTS AND DISCUSSION

Love-Based Curriculum as the Foundation of Humanistic Pedagogy

A love-based curriculum is a philosophical and practical approach to educational design that places affective relationships, empathy, and respect for learners' humanity at the center of the teaching and learning process. It is not merely the addition of an emotional element to the curriculum; rather, it represents a fundamental restructuring that views education as a practice of liberation and humanization (Freire, 2018; hooks, 2003). This concept is built upon several principles. First is affection-oriented learning, which emphasizes that teachers must consciously build positive and trusting emotional relationships with students. Such closeness is believed to lower the affective filter and create a safe space in which learners dare to take risks and make mistakes, both of which are essential in language learning (Arnold, 1999). Second is value integration. Learning materials are not viewed as neutral content, but as a medium for cultivating universal values such as compassion, tolerance, justice, and humanity.

In Arabic learning, this may involve selecting literary, historical, or religious texts that highlight noble values in Arab-Islamic culture rather than focusing solely on grammatical rules. Third is student-centered education. In line with Rogers and Freiberg's (1994) humanistic theory of education, this curriculum recognizes the uniqueness of every learner. Learning is designed to be relevant to students' lives, interests, and experiences so that the learning process is experienced as authentic and personally meaningful.

If AI represents the hardware and application software of learning, then a love-based curriculum functions as the philosophical operating system that regulates how these applications are used. Without a strong philosophical foundation, technology integration risks becoming directionless and may focus only on superficial performance metrics. A love-based curriculum provides ethical purpose and direction for the use of technology. The literature analysis indicates that the implementation of this concept in AFL is based on three operational pillars.

First, it creates a psychologically safe classroom, namely an environment in which learners feel accepted, respected, and free from threat or judgment. This directly addresses Krashen's (1985) affective filter hypothesis. When AI is used, its design should reflect this principle. For instance, AI-generated feedback should be constructive and encouraging rather than judgmental. Learning platforms should also provide learners with control or autonomy over their learning pathways rather than imposing a rigid single route.

Second, it connects language materials with learners' identities and values. A love-based curriculum rejects the view that language is a sterile subject. Selected materials should be relevant to learners' lives and encourage reflection on human values (hooks, 2003). In AFL, this means going beyond dry grammatical example sentences. Teachers and AI can work together to present texts from Arabic literature, poetry, or history that stimulate discussions about love, friendship, justice, and the meaning of life. AI can also help personalize text selection based on interests expressed by learners through their interactions with the platform.

Third, it positions the teacher as a model of compassion and empathy. The teacher's most important role in this curriculum is to embody the values being taught (Rogers & Freiberg, 1994). The time saved by AI should be reinvested in personal interaction: listening to students' stories, asking about their well-being, and showing genuine concern for their struggles in learning. These small acts build relatedness, one of the pillars of intrinsic motivation in Self-Determination Theory (Ryan & Deci, 2000). Thus, a love-based curriculum ensures that technological efficiency does not sacrifice the essence of human relationships in education.

Toward Synergy: AI, Educational Psychology, and a Love-Based Curriculum

Individually, each element - innovative AFL, a love-based curriculum, AI, and educational psychology - offers only a partial solution. Their true strength lies in synergy and integration. Existing literature tends to discuss these domains separately. There are numerous studies on AI for language learning and many studies on humanistic pedagogy; however, very few explicitly attempt to build a bridge between the two. This synergy can be explained through the following dimensions.

First, conceptual integration. The synergy can be imagined as follows: a love-based curriculum serves as the philosophical foundation or 'soul' of the learning system. It establishes the primary goal, which is not only language mastery but also learner development, the cultivation of love for the language, and the maintenance of humanistic interaction. Educational psychology functions as the architect or 'brain' of the system. It provides a blueprint based on well-established theories of how humans learn and become motivated. The principles of Self-Determination Theory, Cognitive Load Theory, and Multiple Intelligences guide the design of each learning interaction. Artificial Intelligence acts as the sophisticated tool or 'hand'. AI executes the design prepared by educational psychology to achieve the goals set by the love-based curriculum. It provides personalization, adaptability, and instant feedback that enable the principles of educational psychology to be implemented at scale, while also freeing teachers to focus on roles that cannot be replaced by machines: building relationships, providing emotional support, and serving as role models.

Second, the benefits of synergy. Such integration has the potential to create a learning ecosystem that can simultaneously: (1) improve cognitive effectiveness through AI-based adaptive learning designed in accordance with Cognitive Load Theory; (2) strengthen intrinsic motivation by fulfilling learners' needs for autonomy, competence, and relatedness through personalized choices and reinforced teacher-student interaction; (3) reduce language anxiety by creating a psychologically safe learning environment and providing private practice spaces free from embarrassment through AI applications; and (4) develop holistic learners who are not only linguistically competent but also emotionally intelligent and deeply appreciative of the culture behind the language being learned.

The Technological Paradox in the Humanization of Arabic Language Learning and the Role of Psychology

Educational psychology is a discipline that applies psychological theories and methods to understand and improve teaching and learning processes. It provides a scientific basis for

designing effective pedagogical interventions by considering learners' cognitive, social, and emotional development. Several theories in educational psychology are highly relevant to the AFL context. First, Self-Determination Theory (SDT) is an influential theory of motivation (Deci & Ryan, 2000). It states that intrinsic motivation - engaging in an activity for its inherent satisfaction - develops when three basic psychological needs are met: autonomy, the feeling of having choice and control over one's actions; competence, the feeling of being capable and effective; and relatedness, the feeling of being connected to and valued by others. In AFL, creating an environment that supports these three needs is essential for sustaining long-term motivation. This integrative orientation is consistent with a recent Kalamuna review, which emphasizes that Arabic learning should connect linguistic, psychological, and educational principles rather than treating language acquisition as a purely linguistic process (Nafi'ah & Setiyawan, 2024).

Second, the Theory of Multiple Intelligences challenges the notion of a single intelligence measured by IQ and proposes that human beings possess various types of intelligence, such as linguistic, logical-mathematical, spatial, musical, interpersonal, and intrapersonal intelligence (Gardner, 1983). The implication for AFL is that teachers should employ diverse teaching and assessment methods that accommodate different learner profiles. Learners with musical intelligence, for example, may learn pronunciation more effectively through songs, whereas learners with kinesthetic intelligence may benefit from drama or movement-based activities. Third, emotion regulation and language anxiety are also important. Educational psychology offers strategies to help learners manage negative emotions such as anxiety. Emotion regulation - the ability to monitor, evaluate, and modify emotional responses - can be taught explicitly. Techniques such as mindfulness, cognitive restructuring, and relaxation strategies can help learners lower their affective filters (Dewaele et al., 2018).

The literature reveals a fundamental paradox in the use of AI in language education. On the one hand, AI is often viewed as a dehumanizing tool. A common concern is that interaction with machines may replace essential human interaction and create an isolated and emotionally cold learning experience (Zawacki-Richter et al., 2019). Automated assessment systems, for example, may reduce rich language expression to simple right-or-wrong scores, neglecting creativity and nuance. If not properly managed, an excessive focus on AI efficiency may worsen mechanistic pedagogical approaches that have long been criticized for failing to engage learners emotionally.

On the other hand, deeper analysis shows that AI, when deliberately and wisely implemented, can become a tool for humanization. This is the core of the paradox. By automating repetitive and time-consuming tasks - such as providing basic grammar practice, correcting spelling, or training pronunciation - AI can free teachers' time and energy (Zawacki-Richter et al., 2019). Teachers no longer need to be trapped in the roles of drill providers or correction machines. Instead, they can dedicate valuable classroom time to activities that machines cannot perform: facilitating in-depth discussions, providing personal emotional support, understanding individual difficulties, inspiring learners, and building authentic relationships.

In this scenario, AI does not replace teachers; rather, it empowers them to become more fully human in their pedagogical roles. In the AFL context, this is particularly significant. Speech-recognition applications, for example, can provide learners with unlimited opportunities to practice difficult *ḥurūf* pronunciation privately, without fear of being judged by classmates or teachers (Bashori et al., 2024). Such private practice builds competence and confidence. When learners enter the classroom, they are better prepared to engage in real communication (*muḥādathah*) facilitated by the teacher. Thus, technology serves as scaffolding that enables higher-quality human interaction rather than eliminating it. The key to resolving this paradox is to view AI not as a teacher replacement but as an intelligent assistant that strengthens the teacher's role as facilitator and mentor.

Educational Psychology as a Pragmatic Bridge between AI and Love-Based Education

Educational psychology functions as a pragmatic bridge that connects the technological potential of Artificial Intelligence (AI) with the humanistic values of love-based education. On the one hand, a love-based curriculum emphasizes respect for learners' dignity, the development of meaningful relationships, and the fulfillment of students' emotional and social needs. On the other hand, AI implementation in education often focuses on technical aspects such as data analytics, learning personalization, and process efficiency. The gap between philosophical ideals and technological practice requires an approach capable of translating abstract values into operational learning design. In this context, educational psychology provides theoretical foundations and applied models for integrating AI with education-oriented human values. One relevant theory is Self-Determination Theory (SDT), developed by Deci and Ryan (2000). This theory explains that learners' intrinsic motivation grows when three basic psychological needs are fulfilled: autonomy, competence, and relatedness.

The autonomy dimension can be realized by giving learners the freedom to make choices in the learning process. AI platforms can provide various options, such as choosing reading topics, selecting preferred learning activities, or determining learning pace according to individual ability. Thus, learners are not merely objects that receive information; they become active subjects who have control over their learning experience. The need for competence can then be fulfilled through AI systems that adjust the level of material difficulty to learners' abilities. AI can provide optimal challenges or desirable difficulty while offering fast and clear feedback. When learners can see their progress through indicators, achievement badges, or point systems, their confidence and motivation are likely to increase.

The dimension of relatedness emphasizes that the use of AI must not eliminate the social dimension of education. Although AI is often used individually, learning platforms can still be designed to strengthen interaction among learners through collaborative projects, discussion forums, or recommendations for study groups with comparable proficiency levels. Nevertheless, the teacher's role remains central in building emotional relationships, empathy, and a caring learning climate. A Kalamuna study found that learning-resource availability and lecturer support jointly contributed 77.5% to Arabic learning motivation, reinforcing the importance of combining adequate resources with sustained relational support (Aini & Abidin, 2025). In addition to SDT, Cognitive Load Theory contributes significantly to AI-based learning design. According to Sweller (2011), human working memory has limited capacity; therefore, the presentation of overly complex information may cause cognitive overload. In learning complex material such as Arabic *iʿrāb* rules, AI can help manage cognitive load by presenting material gradually and systematically. AI-based Intelligent Tutoring Systems (ITS) can divide content into smaller units that are easier to understand. Learners can study one concept, complete relevant exercises, and proceed to the next material only after demonstrating a certain level of mastery. This approach not only improves learning effectiveness but also reduces the frustration and anxiety that often emerge when learners encounter overly difficult material (Sweller, 2011).

Gardner's (1983) Theory of Multiple Intelligences provides the perspective that every learner has distinct learning preferences and intellectual potentials. Therefore, AI platforms should be designed to provide varied learning activities that suit learners' diverse characteristics. For instance, in Arabic vocabulary learning, AI can present material in multiple formats. Learners with linguistic intelligence may learn through vocabulary lists and definitions. Those with spatial intelligence may learn through word-picture matching games. Learners with

musical intelligence may use songs or rhythm to remember vocabulary, whereas those with interpersonal intelligence may learn through conversation simulations or collaborative activities.

AI refers to computational systems designed to simulate human cognitive processes, such as learning, reasoning, perception, and language understanding (Russell & Norvig, 2021). In language education, AI is no longer science fiction; it has become a practical tool with various proven applications. The application of AI in AFL can be categorized into several major areas. First, Intelligent Tutoring Systems (ITS) are software systems that provide personalized instruction and feedback to learners without direct teacher intervention. For Arabic, ITS can be designed to train *ṣarf* or morphology by providing unlimited word-formation exercises based on roots and giving instant feedback when errors occur in pattern formation (*wazn*) (Habash, 2010). Second, speech recognition for pronunciation practice uses technology trained specifically on Arabic phonemes to provide accurate and objective feedback on learners' pronunciation. This application can help learners practice independently to refine *makhārij al-ḥurūf*, distinguish similar sounds, such as /s/ versus /ṣ/ and /t/ versus /ṭ/, and obtain real-time pronunciation scores (Bashori et al., 2024).

Third, Natural Language Processing (NLP) for text analysis can be used to analyze learners' writing automatically. Such systems can identify errors in *iʿrāb* or grammatical case, sentence structure, and vocabulary choice, and then provide constructive suggestions for improvement. This frees teachers from repetitive correction tasks (Habash, 2010). Fourth, adaptive learning platforms represent the most holistic AI application. These platforms use learning analytics to continuously track each learner's progress. Based on performance data, the platform dynamically adjusts material difficulty, types of exercises, and learning pathways for each individual, ensuring that every learner studies within their zone of proximal development (Vygotsky, 1978).

A Synergistic Conceptual Model for Holistic Learning (Novelty)

The synergistic conceptual model for holistic learning proposed in this study originates from the need to integrate Artificial Intelligence (AI), educational psychology, and the paradigm of love-based education into a single complementary framework. This model represents the main novelty of the study because it does not regard the three elements as separate components, but as an integrated system that works dynamically to shape adaptive, humanistic, and meaningful learning experiences. The AI-Psychology-Love Synergy Model in Arabic as a Foreign Language learning begins with AI-based diagnosis and personalization informed by

psychological insight. At this stage, AI technology functions as a diagnostic instrument that not only identifies learners' linguistic abilities but also understands their psychological characteristics and personal preferences. When learners first interact with the learning platform, the AI system comprehensively collects data through initial activities such as interactive questionnaires, digital interaction pattern analysis, response histories, and diagnostic tasks.

Unlike conventional approaches that focus solely on cognitive aspects, this model broadens assessment by integrating affective and personal dimensions. AI does not only measure vocabulary mastery, grammar, reading ability, or communicative skills; it also identifies learning motivation, tendencies toward intrinsic and extrinsic motivation, anxiety levels in using a foreign language, and learners' preferred learning styles. The system also maps personal interests, such as sports, art, science, technology, culture, and Islamic history. This data collection and analysis are based on learning analytics and psychological assessment principles aimed at obtaining a comprehensive understanding of learner characteristics. By using these multidimensional data, AI can construct a learner profile that reflects not only academic ability but also emotional condition, motivational orientation, and individual interests. The final outcome of this stage is a Holistic Learner Profile that integrates cognitive, affective, and personal aspects. This profile becomes the basis for the AI system to generate personalized learning pathways according to each learner's unique needs. The system automatically recommends materials, activity types, learning media, and difficulty levels that best suit individual characteristics.

In practice, learners with high anxiety may receive gradually sequenced materials and more supportive feedback. Learners with strong intrinsic motivation may be given more complex challenges and broader opportunities for exploration. Similarly, learners who have interest in certain fields may receive examples, contexts, and learning materials relevant to their interests, making the learning experience more meaningful.

Interactive Learning Implementation within a Love-Based Ecosystem

Interactive learning implementation within a love-based ecosystem is the stage in which the personalized learning pathway previously designed through the Holistic Learner Profile is actualized. At this stage, AI technology and the teacher's role are synergistically integrated to create adaptive, personal, and humanistic learning experiences. Learners interact with various AI-based learning modules for independent practice, such as pronunciation practice through speech-recognition technology, *naḥw* and *ṣarf* exercises through Intelligent Tutoring Systems (ITS), reading texts aligned with individual interests, and receiving instant feedback. These

activities are designed to strengthen learners' autonomy and competence as explained in Self-Determination Theory (SDT). On the other hand, teachers use the data from the Holistic Learner Profile to focus instruction on aspects that cannot be replaced by technology, such as facilitating authentic discussions, managing collaborative projects, providing emotional support, and creating a psychologically safe learning environment based on the principles of love-based education: empathy, appreciation, and relatedness.

The application of this model is highly relevant to the context of Arabic as a Foreign Language (AFL), which involves complex linguistic and affective challenges. The linguistic distance between Arabic and other languages, particularly those from the Indo-European family, often creates difficulties in mastering phonology, especially emphatic and guttural sounds that do not exist in many other languages. In addition, the root-and-pattern morphology of Arabic, based on triliteral roots and *wazn* patterns, requires strong analytical ability in vocabulary formation. These challenges are compounded by diglossia between Modern Standard Arabic (*fuṣḥā*) and local dialects (*ʿāmmiyyah*), which raises pedagogical dilemmas about which variety should be prioritized in instruction. Such linguistic complexity often triggers foreign language anxiety that affects learners' motivation and academic performance. In this context, integrating AI and educational psychology enables the provision of materials suited to learners' abilities, interests, and emotional conditions so that learning becomes more effective and meaningful.

To ensure that learning remains dynamic and sustainable, this model integrates feedback, reflection, and cyclical adaptation mechanisms. The AI platform continuously collects and analyzes data related to performance, interaction patterns, task-completion time, and learner success rates to adjust learning pathways in real time. Teachers complement these data through observations of learners' participation, motivation, and emotional well-being, and then provide more personal and contextual feedback. Meanwhile, learners are encouraged to conduct metacognitive reflection on their learning experiences so that they can recognize their strengths, difficulties, and effective learning strategies. Based on the principles of formative assessment and reflective practice, all information obtained from AI, teachers, and learners is used to update the Holistic Learner Profile and adjust the learning pathway in the next cycle. Thus, this model does not place AI at the center of learning; rather, it positions learners and teacher-learner relationships as the core of education, while technology functions as a supporting tool that strengthens cognitive efficiency without neglecting affective growth and human values (Rogers & Freiberg, 1994).

CONCLUSION

This literature review has provided an in-depth analysis and synthesis of the challenges and opportunities in Arabic as a Foreign Language (AFL) learning in the digital era. Its central conclusion is that fragmented approaches - whether focusing only on technology, pedagogy, or psychology - are insufficient to address the complexity of AFL learning holistically. The most promising solution lies in the deliberate synergy of three pillars: the adaptive sophistication of Artificial Intelligence (AI), the empirical insights of educational psychology, and the humanistic foundation of a love-based curriculum. AI offers unprecedented tools for personalization, instant feedback, and independent practice that can significantly reduce cognitive load and build foundational competence. Without guidance, however, AI risks creating an isolated and impersonal learning experience. A love-based curriculum provides the philosophical and ethical guidance needed to ensure that the ultimate goal of education remains the humanization of learners, the building of positive relationships, and the cultivation of intrinsic love for the language. Educational psychology serves as a vital bridge that translates this noble philosophy into design principles that can be implemented in AI technology and teaching strategies, particularly by focusing on the fulfillment of learners' basic psychological needs for autonomy, competence, and relatedness. The novelty of this study lies in the formulation of a three-stage Synergistic Conceptual Model: diagnosis-personalization, interactive implementation, and feedback-adaptation. This model positions AI not as a replacement for teachers but as an intelligent assistant that empowers teachers to focus on their most human roles. By integrating AI analytics, educational psychology principles, and the ethos of a love-based curriculum, the model offers a framework for creating an Arabic language learning ecosystem that is simultaneously cognitively effective, affectively healthy, and deeply motivating.

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Kalamuna: Journal of Arabic Language Education and Arabic Language

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