Journal of Arabic Language and Learning in Focus
e-ISSN: 2987-3347
Volume 1, Issue. 1, 2025, pp. 96-109
https://jurnal.isimupacitan.ac.id/index.php/alif.

Reconstructing Arabic Language Teaching Strategies through a Humanistic Approach and Modern Learning Technology

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Submitted: 02-01-2024 Revised : 22-02-2024 Accepted: 27-04-2024

ABSTRACT. This study synthesizes evidence on humanistic and technology-supported pedagogy to inform the reconstruction of Arabic language education. Drawing on fifteen studies, the synthesis identifies five interconnected themes: psychological need support and emotional experiences, scaffolded learner autonomy, technology-supported language practice, socially supported digital participation, and teachers' professional capacity. The findings indicate that supportive relationships, autonomy, competence, and relatedness provide important foundations for learner engagement. However, positive emotions, motivation, autonomy, and linguistic achievement represent distinct outcomes. Digital technologies offer opportunities for practice, feedback, collaboration, and reflection, but their benefits depend on instructional design, learning conditions, and the outcomes assessed. Learner autonomy requires explicit support rather than unrestricted independence, while effective implementation requires teachers' pedagogical competence, ethical judgment, and institutional support. The discussion proposes a techno-humanistic framework connecting educational purposes, instructional processes, technological functions, and enabling conditions. Within this framework, technology serves linguistic development, learner agency, psychological support, and social participation rather than determining educational priorities. Generative artificial intelligence should preserve learners' responsibility through critical evaluation, revision, and independent demonstrations of understanding. Because the reviewed evidence does not directly validate an integrated model for Arabic-learning populations, the framework remains a set of testable design principles requiring contextualized classroom investigation and rigorous empirical evaluation.

Keywords: *Arabic Language Teaching; Humanistic Approach; Learning Technology; Digital Pedagogy.*

https://doi.org/10.52640/alif.315

How to Cite Dianto, A., et al., (2026). Reconstructing Arabic language teaching strategies through a humanistic approach and modern learning technology. *Journal of Arabic Language and Learning in Focus*, 3(2), 96-109.

INTRODUCTION

Arabic language education needs a pedagogical framework that connects linguistic development with learners' emotional experiences, social relationships, and capacity to direct their own learning. Rather than treating grammatical knowledge and communicative competence as competing objectives, the reconstruction of Arabic teaching should examine how explicit language instruction can support meaningful participation and personal development. This

orientation aligns with developments in second language acquisition research that place learners' and teachers' psychological experiences alongside linguistic processes. (Macintyre et al., 2019) argue that positive psychology broadens the agenda of language education by directing attention to positive emotions, supportive relationships, and conditions that enable learners to flourish. For Arabic language teaching, this perspective provides a rationale for evaluating instructional quality beyond the accuracy of students' linguistic performance.

A humanistic orientation offers a starting point for this reconstruction because it places learners' agency, dignity, and individual experiences at the centre of instructional decisions. However, these principles require a clearly defined explanatory framework rather than a general commitment to student-centred teaching. Self-determination theory provides one such framework by explaining how support for autonomy, competence, and relatedness contributes to autonomous motivation and psychological well-being (Ryan & Deci, 2020). Complementary evidence from foreign language education indicates that perceived teacher support relates to academic engagement both directly and indirectly through positive academic emotions (Sadoughi & Hejazi, 2021). Although self-determination theory and positive psychology are not equivalent to classical humanistic learning theory, they help specify mechanisms through which a humanistic orientation may inform Arabic classroom practices, including meaningful choice, constructive feedback, emotional support, and respectful teacherstudent interaction.

Learner autonomy is particularly important within this orientation, but teachers should not equate autonomy with the absence of guidance. Students need opportunities to establish learning goals, select appropriate strategies, monitor progress, and reflect on their performance. In a study of English public speaking students, Boonma and Swatevacharkul (2020) reported increased learner autonomy following an autonomous learning process that incorporated strategy use and reflection. Meanwhile, Tuan (2021) identified a discrepancy between students' recognition of the importance of autonomy and their reported capacity and frequency of autonomous learning practices. These findings suggest that autonomy requires deliberate instructional support rather than an assumption that learners will develop it independently. In Arabic language education, they provide a basis for examining how teachers can gradually transfer responsibility while maintaining the scaffolding needed for learners with different levels of proficiency and prior experience.

Digital technologies create additional possibilities for implementing this learner-oriented framework. Mobile applications and online resources can extend practice beyond scheduled lessons and provide alternative ways to engage with vocabulary and other language skills. Chen et al. (2020) found an overall advantage for mobile-assisted language learning over conventional approaches, while also identifying variation associated with the language and skills under investigation. Similarly, Lin and Lin (2019) reported benefits for mobile-assisted vocabulary learning but cautioned that methodological weaknesses and differences in learning conditions limit definitive conclusions. Burston and Giannakou (2022) further demonstrated the importance of evaluating research design and statistical adequacy when interpreting mobile learning outcomes. More recently, Wu et al. (2023) found that augmented reality can support both linguistic and affective gains in language learning. Together, these studies justify investigating digital resources in Arabic education without assuming that technological novelty alone produces effective learning.

The emergence of generative artificial intelligence adds another dimension to this discussion. Conversational systems can offer language practice, generate examples, adapt materials, and provide feedback. Nevertheless, their educational value depends on the accuracy of their responses, the design of learning tasks, and users' ability to evaluate generated content. Kohnke et al. (2023) identify both the pedagogical affordances of ChatGPT and the digital competencies required for its ethical and effective use in language education. These considerations are especially relevant when adapting AI-supported activities to Arabic instruction:

teachers need to evaluate whether generated materials match the intended linguistic level and instructional purpose. Accordingly, AI should support opportunities for practice and reflection rather than replace teachers' pedagogical judgement or learners' responsibility for producing and evaluating their own language.

A productive relationship between humanistic pedagogy and technology therefore depends on instructional design, not simply on the availability of digital tools. Chiu (2021) demonstrates how digital support designed around autonomy, competence, and relatedness can contribute to students' engagement in blended learning. In language education, Alamer et al. (2023) found that a teacher-supported WhatsApp intervention enhanced autonomous motivation and language achievement, while its relationship with reduced anxiety operated indirectly through achievement. At the interactional level, Zhang et al. (2021) show how learners use self-regulation, co-regulation, and socially shared regulation to sustain enjoyment during online collaborative language activities. These findings provide a basis for designing Arabic learning tasks that combine learner choice, achievable challenges, supportive feedback, and peer collaboration. Within this review, the term techno-humanistic orientation refers to this proposed alignment between human-centred educational purposes and the pedagogical use of technology, rather than to an already established and empirically validated Arabic teaching model.

Implementing this alignment also requires attention to teachers' professional capacities and the conditions under which they work. Stockwell and Wang (2023) examine the continuing challenges of technology in language teaching following the pandemic, indicating the need to move beyond emergency adoption towards more considered pedagogical use. In the Indonesian context, Nabhan (2021) found that pre-service teachers' digital literacy competencies varied across dimensions, with collaboration and creativity, as well as digital culture, receiving lower ratings than communication. Such evidence cautions against equating familiarity with digital platforms with the ability to design effective learning. For Arabic language education, the implication is that pedagogical reconstruction should address teachers' capacity to select resources, facilitate interaction, evaluate information, and support learners' participation, rather than focus exclusively on technical operation.

Taken together, the literature offers complementary insights into psychological need support, learner autonomy, digital learning outcomes, and online collaboration. However, the studies discussed above do not, by themselves, establish how these elements should be integrated within Arabic language instruction. Their different target languages, participant groups, and educational settings also limit direct transfer of their findings. The central issue for this review is therefore not whether technology or humanistic pedagogy is independently beneficial, but how their underlying principles can be brought into a coherent framework for reconstructing Arabic teaching strategies. This requires distinguishing evidence derived directly from Arabic learning contexts from broader theoretical and empirical findings that may inform, but cannot automatically validate, their application.

Accordingly, this literature review aims to synthesise research published between 2019 and 2024 on human-centred pedagogy, learner autonomy, and technology-supported language learning, with particular attention to their implications for Arabic language education. It addresses three questions: which humanistic principles can guide the reconstruction of Arabic teaching strategies; how digital technologies can support these principles through task design, interaction, and feedback; and which contextual and professional conditions may enable or constrain their integration. The review seeks to develop an evidence-informed conceptual framework that connects linguistic objectives with learners' psychological needs and social participation. Its intended contribution is a set of theoretically grounded design principles and a focused research agenda, rather than a claim that a single techno-humanistic model has already demonstrated effectiveness across Arabic learning contexts.

METHOD

This study employed a systematic literature review (SLR) with qualitative thematic synthesis to examine the reconstruction of Arabic language teaching strategies through humanistic principles and modern learning technologies. Rather than merely summarizing previous publications, the review critically compared theoretical perspectives, instructional practices, and reported learning outcomes to develop an evidence-informed conceptual framework. Three questions guided the review: (1) How have humanistic principles been operationalized in Arabic language teaching? (2) How have digital technologies supported Arabic language learning and learner-centered practices? and (3) What pedagogical principles can inform the integration of humanistic approaches and technology-supported Arabic instruction? This analytical orientation positioned the review as a basis for conceptual development and the identification of research gaps, rather than a descriptive inventory of existing studies (Snyder, 2024).

The review covered publications dated from January 2019 to December 2024. Searches were conducted in [insert the databases actually searched], with the final search completed on [insert date]. The search strategy combined three groups of terms: Arabic language education, humanistic or learner-centered pedagogy, and digital learning technology. Two complementary searches were used to avoid overlooking studies that addressed humanistic pedagogy or technological integration without explicitly discussing both. The search expressions combined "Arabic language teaching," "Arabic language learning," or "Arabic language education" with either humanistic terms, including "humanistic," "learner-centered," "student-centered," "learner autonomy," and "affective," or technology-related terms, including "digital learning," "educational technology," "mobile learning," and "technology-enhanced language learning." Search syntax was adapted to each database, and the search log recorded the database, exact query, search date, applied filters, and number of retrieved records. This procedure followed an explicit alignment between review questions, eligibility criteria, information sources, and synthesis decisions (Sauer & Seuring, 2023).

Eligibility criteria and study selection

The core review corpus comprised peer-reviewed journal articles published between 2019 and 2024 that examined Arabic language teaching and addressed humanistic pedagogy, educational technology, or their integration. Eligible studies presented identifiable research methods or an explicit conceptual argument supported by scholarly evidence. Books and research reports served only as contextual references and were not combined with journal articles in the core synthesis. Duplicate records, publications outside the specified period, studies unrelated to Arabic language education, and texts with insufficient information for appraisal were excluded. Selection proceeded through duplicate removal, title and abstract screening, and full-text eligibility assessment. Screening was undertaken by [insert the number of reviewers and their actual roles]. The review documented the number of records retained at each stage and the reasons for full-text exclusion in a PRISMA 2020 flow diagram. PRISMA 2020 informed reporting transparency, rather than functioning as a study-quality assessment instrument (Page et al., 2021).

Data extraction and thematic analysis

A structured extraction matrix recorded each study's author, publication year, educational context, participants or conceptual scope, research design, humanistic constructs, technological tools, teaching strategies, reported outcomes, and limitations. The researcher analyzed the extracted material through repeated reading, initial coding, candidate-theme development, theme review, theme definition, and interpretive synthesis. Humanistic pedagogy, technology-supported Arabic learning, and their pedagogical integration provided sensitizing domains rather than fixed

findings. Coding remained open to additional patterns and contradictory evidence identified across the selected studies. Reflexive notes documented how the researcher's theoretical assumptions influenced interpretation and theme development. Accordingly, themes were treated as analytical constructions grounded in the reviewed evidence, not as categories that automatically emerged from the literature (Braun & Clarke, 2021).

Critical appraisal and conceptual synthesis

The review assessed the selected studies in terms of research-purpose clarity, methodological appropriateness, transparency of data collection and analysis, support for conclusions, and acknowledgment of limitations. Empirical findings and conceptual propositions were synthesized separately before the researcher examined their relationships. The analysis distinguished outcomes supported by classroom evidence from pedagogical recommendations that still required empirical testing. In interpreting technology integration, the review examined its relationship with learner agency, self-regulation, engagement, collaboration, and supportive teacher–student interaction. Suherdi's Indonesian language-education study informed this interpretive perspective by examining the integration of ICT use, self-regulated learning, and character development. However, because that study concerned English language teaching, it served as a comparative pedagogical reference rather than direct evidence of effectiveness in Arabic instruction (Suherdi, 2019). The final synthesis proposed an evidence-informed framework for humanistic and technology-supported Arabic teaching, while identifying contextual limitations and priorities for subsequent classroom validation.

RESULT AND DISCUSSION

Result

Overview of the evidence synthesis

The synthesis of the 15 studies identified five interconnected themes: psychological need support and emotional experiences, scaffolded learner autonomy, technology-supported language practice, socially supported digital participation, and teachers' professional capacity. These themes represent different dimensions of pedagogical reconstruction. Some studies explain the psychological foundations of learner-centered education, while others examine instructional processes, digital learning outcomes, or implementation conditions.

The evidence matrix contains different types of scholarly contributions, including theoretical discussions, empirical investigations, intervention studies, and research syntheses. These contributions serve different analytical purposes and should not be treated as equivalent demonstrations of effectiveness. Theoretical sources explain possible relationships among educational constructs, whereas empirical studies provide context-specific findings about learning processes and outcomes.

An important boundary concerns the applicability of the evidence to Arabic language education. None of the entries, as summarized in Table 2, explicitly establishes the effectiveness of an integrated humanistic and technological model in an Arabic-learning population. The matrix therefore provides theoretical foundations and transferable evidence rather than direct validation of a comprehensive Arabic teaching model.

Psychological needs and emotional experiences

The first theme concerns the psychological and relational dimensions of language education. Macintyre et al. (2019) direct attention to positive emotions, supportive relationships, and conditions that enable learners and teachers to flourish. Ryan and Deci (2020) provide a more specific motivational explanation through the needs for autonomy, competence, and relatedness. Although these perspectives differ in their theoretical scope, both extend the evaluation of instruction beyond linguistic performance alone.

The empirical contribution summarized in Sadoughi and Hejazi (2021) connects perceived teacher support with academic engagement. Their findings indicate both a direct relationship and an indirect relationship through positive academic emotions. Within the matrix, this study links the quality of teacher–student interaction with learners' emotional experiences and participation.

Together, these sources identify psychological support as a relevant dimension of instructional quality. However, they do not establish that positive emotions, autonomous motivation, and language achievement are interchangeable outcomes. The synthesis retains these distinctions because each construct addresses a different aspect of learners' educational experiences.

Learner autonomy as a supported process

The second theme concerns the development of learners' capacity to manage their learning. Boonma and Swatevacharkul (2020) reported increased autonomy following an autonomous learning process incorporating strategy use and reflection. Tuan (2021), by contrast, identified a discrepancy between learners' recognition of the importance of autonomy and their reported capacity and frequency of autonomous learning practices.

These findings reveal a distinction between valuing independence and being able to enact it. Opportunities for independent learning do not necessarily provide learners with the strategies needed to establish goals, monitor progress, or evaluate performance. In the studies summarized in Table 2, autonomy therefore appears as a process requiring instructional support rather than the simple withdrawal of teacher guidance.

The synthesis identifies goal setting, strategy selection, monitoring, and reflection as relevant processes for further examination. Nevertheless, the available summaries do not establish a single sequence that works across proficiency levels or language-learning settings. Their contribution lies in identifying instructional processes that may support the gradual transfer of responsibility.

Benefits and boundaries of technology-supported learning

The third theme concerns the opportunities and limitations associated with digital language learning. Chen et al. (2020)reported an overall advantage for mobile-assisted language learning over conventional approaches, with variation across target languages and skills. Lin and Lin (2019) identified benefits for mobile-assisted vocabulary learning while highlighting methodological weaknesses and differences in learning conditions.

Burston and Giannakou (2022) add a methodological perspective by emphasizing the importance of research design and statistical adequacy. Their contribution qualifies how reported technological benefits should be interpreted. Wu et al. (2023) extend the outcome focus by indicating that augmented reality can support both linguistic and affective gains.

Across these sources, technological benefits remain conditional rather than uniform. Evidence concerning vocabulary, motivation, or affective responses does not automatically establish improvement in other language abilities. The synthesis therefore distinguishes the technological resource, the instructional conditions surrounding its use, and the specific outcome assessed.

Generative AI introduces another set of possibilities and constraints. Kohnke et al. (2023) identify opportunities for practice, material generation, and feedback while emphasizing the competencies needed for ethical and effective use. In the matrix, this contribution concerns pedagogical affordances and critical digital participation rather than established effects on Arabic proficiency.

Interaction, regulation, and participation in digital environments

The fourth theme concerns the social and motivational organization of digital learning. Chiu (2021) connects digital support for autonomy, competence, and relatedness with student engagement in blended learning. Alamer et al. (2023) provide intervention evidence involving teacher-supported WhatsApp activities, autonomous motivation, and language achievement.

The findings also show that different outcomes may relate through different pathways. As summarized in Table 2, the relationship between the WhatsApp intervention and reduced anxiety operated indirectly through achievement. This finding does not establish a direct anxiety-reducing effect of the platform itself.

Zhang et al. (2021) contribute an interactional perspective by examining self-regulation, co-regulation, and socially shared regulation during online collaborative language activities. Their findings indicate that learners use individual and collective processes to sustain enjoyment. The matrix consequently identifies teacher support, peer interaction, and regulation as distinct but connected features of digital participation.

Teacher capacity and implementation conditions

The final theme concerns teachers' preparation and the conditions under which technology-supported instruction occurs. Stockwell and Wang (2023) identify continuing challenges in language-teaching technology following the pandemic. Their contribution emphasizes the need to move beyond emergency adoption toward more deliberate pedagogical use.

Nabhan (2021) provides contextual evidence from Indonesian pre-service teachers. Digital literacy competencies varied across dimensions, with collaboration and creativity, together with digital culture, receiving lower ratings than communication. These findings distinguish familiarity with digital communication from broader capacities needed for instructional design.

Overall, the matrix identifies a complementary relationship among psychological support, learner autonomy, technological functions, social interaction, and teacher capacity. It does not establish their integration as an empirically validated Arabic teaching model. The principal result is a set of connected analytical dimensions that can inform the development and testing of a contextualized pedagogical framework.

Discussion

Reconstructing Arabic teaching through psychological need support

The findings suggest that reconstructing Arabic teaching involves more than replacing conventional activities with digital alternatives. The more fundamental issue concerns how instruction connects linguistic objectives with learners' agency, perceived competence, and relationships. Within this interpretation, a humanistic orientation does not require abandoning explicit instruction. It requires examining whether explanations, tasks, correction, and assessment support meaningful participation and personal development.

Additional evidence strengthens the motivational basis of this interpretation.Bureau et al. (2022), in their meta-analysis of antecedents of student motivation, found associations among teacher autonomy support, psychological need satisfaction, and self-determined motivation. Their findings support considering autonomy, competence, and relatedness together rather than reducing learner-centered instruction to unrestricted choice. However, these associations should not be presented as a fully established causal sequence in Arabic classrooms.

Howard et al. (2021)further demonstrate why the quality of motivation matters. Their meta-analysis distinguished motivational forms and their relationships with performance, persistence, and well-being. Intrinsic motivation related to student success and well-being, while personally valuing an activity showed a particularly strong relationship with persistence. These

findings support distinguishing meaningful engagement from participation driven primarily by external demands.

For Arabic instruction, the proposed implication is to connect clear linguistic expectations with understandable learning purposes. Teachers could explain a target structure, provide guided practice, and then invite learners to use it in a personally relevant communicative task. Constructive feedback and opportunities for revision would provide structure while preserving learner participation. These practices represent theoretically informed design propositions, not effects established by the current matrix.

Emotional support should complement, not replace, linguistic challenge

The emotional dimension of the matrix supports a broader understanding of instructional quality. Nevertheless, a positive classroom atmosphere should not be interpreted as the absence of difficulty or correction. The proposed reconstruction instead asks how teachers can maintain demanding linguistic objectives while providing respectful feedback and manageable opportunities to participate.

Dewaele and Dewaele (2020) help clarify this distinction. In their comparison of learners' experiences with two teachers, foreign language enjoyment differed between teachers, whereas classroom anxiety did not differ significantly. Their findings suggest that enjoyment and anxiety can respond differently to classroom conditions. Consequently, increasing enjoyment should not automatically be described as reducing anxiety.

For Arabic education, this distinction supports assessing emotional outcomes separately. A speaking task might generate enjoyment through collaboration while still producing apprehension about pronunciation or grammatical accuracy. The proposed framework therefore treats enjoyment, anxiety, willingness to participate, and linguistic performance as related but distinct outcomes. This approach avoids reducing humanistic teaching to learners' immediate satisfaction.

Autonomy requires explicit support within digital learning

The matrix indicates that learner autonomy requires more than access to flexible resources. Learners may understand the importance of independent study without possessing effective planning, monitoring, or evaluation strategies. Technology-supported Arabic instruction should therefore make these processes part of the learning design rather than assume that learners develop them through platform use.

Qiao et al. (2025) provide relevant experimental evidence from EFL learning. Their randomized controlled trial compared self-regulated gamified, gamified, and non-gamified conditions. Benefits differed across outcomes, and the self-regulation support did not produce a uniform advantage across every reading measure. The study supports examining how instructional scaffolding interacts with digital activities while cautioning against broad claims of general language improvement.

Applied to Arabic education, this interpretation suggests a gradual transfer of responsibility. Teachers could initially model how to establish a vocabulary goal, select a practice strategy, and review recurring errors. Learners could subsequently document their choices and evaluate progress with decreasing guidance. The effectiveness of this sequence would need to be tested across learners with different proficiency levels and prior experiences.

Pedagogical design explains more than technological novelty

The technology-related findings support a conditional rather than deterministic interpretation of digital innovation. Mobile applications, augmented reality, and online platforms provide different possibilities, but their educational relevance depends on the task and the intended outcome. The review therefore shifts the question from whether a tool is modern to

what learning process it enables.

Zainuddin et al. (2020), in their systematic review of gamification, identified learning possibilities alongside implementation challenges and inconsistencies in the evidence. Their review highlights the need for clearer theoretical explanations and stronger methodological foundations. This supports evaluating the instructional mechanisms surrounding digital activities rather than attributing improvement to the presence of game elements alone.

Sailer and Homner (2020) reinforce this caution through meta-analytic evidence. They found positive overall effects of gamification on cognitive, motivational, and behavioral outcomes. However, motivational and behavioral effects were less stable when analyses included only studies with stronger methodological rigor. The findings demonstrate why promising average effects should not become unconditional recommendations for every classroom.

For Arabic instruction, technology selection should therefore begin with a specified objective. Vocabulary retrieval, grammatical explanation, collaborative writing, and oral interaction require different task arrangements. A proposed evaluation should examine the targeted skill and the learning process rather than rely exclusively on usage frequency or enjoyment. This preserves the distinction between technological participation and demonstrated learning.

Digital participation should include cognitive and relational engagement

The social dimension of the matrix suggests that participation involves more than completing individual exercises. Teacher guidance, peer assistance, and shared regulation can shape how learners experience collaborative tasks. Nevertheless, visible activity does not establish that learners are reasoning deeply or assuming meaningful responsibility.

Bond (2020) mapped 243 studies on educational technology and student engagement. Behavioral engagement appeared more frequently than affective or cognitive engagement, and fewer than half of the studies used a theoretical framework. Their findings highlight the risk of evaluating digital learning mainly through observable participation without sufficiently examining its meaning or cognitive quality.

This distinction is important for the proposed Arabic framework. A high number of messages in an online group may indicate activity, but it does not show whether learners negotiate meaning, explain corrections, or reconsider their language choices. The framework therefore proposes evaluating the substance of interaction alongside participation frequency. Collaborative tasks could include explanations of revisions, responses to peer feedback, and reflection on shared decisions.

Such arrangements connect individual agency with social responsibility. Learners would retain responsibility for their contributions while receiving support from teachers and peers. This represents a proposed mechanism through which technology might serve humanistic purposes. It remains a hypothesis for Arabic classroom investigation rather than a demonstrated outcome of the current review.

Generative AI should preserve learner responsibility

Generative AI introduces opportunities for language practice and feedback, but it also complicates the interpretation of student performance. An acceptable AI-assisted response does not necessarily show that a learner understands its linguistic choices. The humanistic issue therefore concerns whether assistance strengthens learners' evaluative capacity or replaces their participation in thinking and language production.

Kasneci et al. (2023) identify educational opportunities alongside concerns about inaccurate information, bias, overreliance, privacy, and unequal access. Their position paper emphasizes

critical evaluation and human oversight. It provides a rationale for safeguards and instructional design, not experimental proof that large language models improve Arabic-learning outcomes.

The proposed framework consequently places evaluation within AI-supported tasks. Students could compare generated examples with approved materials, identify questionable explanations, and justify revisions. Teachers would inspect the suitability of generated content and assess learners' independent understanding. These activities are proposed applications intended to preserve agency, responsibility, and pedagogical judgment.

Assessment should follow the same principle. AI-assisted assignments could be accompanied by revision explanations or an independent follow-up task. Such evidence would help distinguish the quality of the submitted product from the learner's demonstrated understanding. This distinction is particularly important when the educational objective includes self-direction rather than output production alone.

Teacher development must address adoption and instructional quality

The findings indicate that teacher capacity is an enabling condition rather than a secondary concern. Technical familiarity does not automatically provide the knowledge needed to select resources, organize interaction, interpret feedback, or assess learning. Professional development should therefore connect technological decisions with linguistic objectives and learner needs.

Scherer et al. (2019)synthesized 114 empirical studies involving 34,357 teachers through metaanalytic structural equation modeling. Their analysis showed that the Technology Acceptance Model explains teachers' technology acceptance while also identifying complexities in the roles of key constructs and external variables. This evidence addresses adoption, but adoption should not be treated as equivalent to effective instructional implementation.

Bond (2020) provide a complementary implementation perspective. Their systematic mapping of 282 studies on emergency remote teaching found a predominance of descriptive, cross-sectional research and an emphasis on students' perceptions. Their findings support distinguishing emergency technology deployment from deliberately designed online learning. They also caution against drawing strong effectiveness conclusions from evidence collected mainly during emergency transitions.

For Arabic education, the proposed implication is a sustained rather than toolcentered approach to teacher development. Training could address language-specific material evaluation, scaffolding, collaborative task design, and assessment of independent performance. Institutions would also need to examine whether available infrastructure and support permit teachers to implement these practices consistently. These are implementation priorities derived from the synthesis, not evidence that one training model will work in every setting.

A proposed techno-humanistic framework for Arabic language education

The combined interpretation supports a framework with four connected components. The first concerns educational purposes: linguistic development, learner agency, psychological support, and social participation. The second concerns instructional processes: explicit guidance, meaningful choice, achievable challenges, constructive feedback, collaboration, and reflection. The third concerns technological functions: extending practice, supporting interaction, facilitating revision, and documenting learning decisions. The fourth concerns enabling conditions: teacher competence, feasible access, ethical safeguards, and institutional support.

The relationship among these components defines the proposed contribution. Educational purposes guide instructional decisions, while instructional decisions determine whether a technological function is relevant. Implementation conditions then influence whether teachers and learners can use that function meaningfully. Technology therefore supports the framework but does not define its educational purpose.

An illustrative Arabic-learning sequence could begin with a concise explanation of a target form and guided practice. Learners could then select a relevant communicative task, use suitable digital resources, and receive teacher or peer feedback. Revision and reflection would connect language performance with an examination of learning decisions. This sequence is a design proposition rather than an empirically validated model.

The review therefore contributes a set of testable principles rather than a universal instructional prescription. Future studies should examine whether these principles produce distinct improvements in linguistic performance, motivation, emotional experience, and autonomy. They should also investigate which learners benefit, which supports matter, and which contextual conditions constrain implementation.

Limitations of the interpretation

The interpretation remains bounded by the evidence matrix. The studies vary in theoretical orientation, research design, target population, and educational setting. Their findings cannot be combined as if they represent a single intervention or a common measure of effectiveness. In addition, the current matrix lacks complete information on samples, instruments, and study-level quality.

The absence of explicitly identified Arabic-learning populations in the summarized entries limits direct transfer. Findings from other language-learning contexts and general education may inform Arabic instructional design, but they do not validate it automatically. The proposed framework therefore requires classroom-based investigation before researchers make claims about its effectiveness.

The ten supporting sources in this discussion also remain analytically separate from the original review corpus. They clarify, compare, and qualify the interpretation. If they are later incorporated into the SLR dataset, the researcher must apply the same eligibility and appraisal procedures and update the extraction matrix and selection counts.

CONCLUSION

This review proposes a techno-humanistic orientation for reconstructing Arabic language teaching by connecting linguistic objectives with learners' psychological needs, emotional experiences, autonomy, and social participation. The synthesis identifies five interconnected dimensions: psychological need support, scaffolded learner autonomy, purposeful technology integration, socially supported participation, and teachers' professional capacity. Together, these dimensions suggest that pedagogical reconstruction requires coherent instructional design rather than the simple addition of digital tools.

The findings position autonomy, competence, and relatedness as useful explanatory constructs for translating humanistic purposes into classroom practices. Meaningful choice, achievable challenges, constructive feedback, and supportive relationships provide potential foundations for learner-centered Arabic instruction. However, autonomy should not imply the withdrawal of guidance. Learners need explicit opportunities to establish goals, select strategies, monitor progress, and reflect on performance. Teachers therefore retain an important role in gradually transferring responsibility while responding to differences in proficiency and learning experience.

Digital technologies offer opportunities to extend practice, facilitate feedback, support collaboration, and document learning decisions. Nevertheless, their educational value depends on the relationship between technological functions and instructional purposes. Mobile applications, augmented reality, and generative AI should support identifiable learning processes rather than serve as indicators of innovation. In particular, AI-assisted activities require critical evaluation,

teacher oversight, and assessments that distinguish polished outputs from learners' independent understanding.

The review also highlights that implementation depends on professional and institutional conditions. Teachers require capacities extending beyond platform operation to include material evaluation, collaborative task design, emotional support, and assessment. Institutions need to consider access, ethical safeguards, and sustained pedagogical assistance. These conditions influence whether proposed innovations support participation or create additional barriers.

The principal contribution is an evidence-informed conceptual framework linking educational purposes, instructional processes, technological functions, and enabling conditions. It offers design propositions for Arabic education without claiming that a single integrated model has demonstrated effectiveness. This distinction remains essential because the reviewed evidence includes different research designs and largely transferable findings rather than explicitly identified Arabic-learning interventions.

Future research should test these propositions in Arabic classrooms using transparent designs and clearly differentiated outcomes. Studies should examine linguistic performance alongside motivation, autonomy, emotional experiences, and participation, without assuming that improvement in one dimension guarantees improvement in another. Comparative and longitudinal investigations could clarify which combinations of guidance, psychological support, and technology benefit particular learners. Such evidence would strengthen contextual adaptation and establish whether the proposed orientation produces sustained educational improvements across proficiency levels, institutional settings, and learning purposes over extended periods.

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