

Educational Technology as a Tool for Enhancing Arabic Morphosyntax Proficiency in Malaysian Learners

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ABSTRACT

Mastery of Arabic morphosyntax, which encompasses both nouns (الأسماء – al-asmāʾ) and verbs (الأفعال – al-afʿāl), is essential for achieving comprehensive language proficiency. Nevertheless, this component of Arabic language acquisition is particularly challenging for non-native speakers. Conventional pedagogical approaches—primarily teacher-centered methods such as rote memorization and grammar-translation—are frequently insufficient in equipping learners with the competencies required to navigate the complexities of the Arabic grammatical system. This article closely examines the shortcomings of traditional teaching methods for Arabic morphosyntax and synthesizes research on common challenges and learning difficulties, specifically aiming to improve proficiency among Malaysian learners with modern educational technologies. Empirical findings indicate that the integration of technological tools can substantially improve learning outcomes, enhance motivation, and increase learner engagement in the acquisition of Arabic grammar. A deeper understanding of morphosyntactic structures subsequently contributes to heightening learner confidence, improved oral fluency, greater writing accuracy, and enhanced reading comprehension.

Keywords: Arabic Morphosyntax, Language Learning Challenges, Educational Technology, Malaysian Arabic learners

INTRODUCTION

A member of the Semitic language family, Arabic has a complex and rich structure in which syntax (النحو – naḥw) and morphology (الصرف – ṣarf) are essential for meaning transmission. Unlike languages that mainly rely on word order, Arabic uses syntactic markers (like case endings – iʿrāb) and morphological changes within words (like verb conjugations and noun derivations) to indicate semantic nuances and grammatical relationships. Therefore, a thorough comprehension of the rules governing verbs (الأفعال – al-afʿāl) and nouns (الأسماء – al-asmāʾ)—including the root-and-pattern system, verb conjugation across tenses and moods, noun declension, gender and number agreement, and derivation—is not just an academic exercise but a necessary step toward obtaining functional proficiency in reading, writing, and speaking Arabic (Taha & Saiegh, 2017). Grammar correctness serves as the "shield that protects against the tongue error" and is essential for effective communication (Al-Mashaqbeh & Neama, 2015).

Despite its significance, learning Arabic grammar—especially its morphosyntax—presents serious and ongoing difficulties for students, especially those who are not native speakers (Dajani et al., 2014). According to Mansour et al. (2024), these challenges are commonly mentioned as the main barriers to achieving fluency and communicative competence. The root-and-pattern system, extensive verb conjugation paradigms (tense, mood, voice, person, gender, and number agreement), the noun declension system (iʿrāb), and the infamously intricate and numerous broken plural patterns (jamʿ taksīr) are among the areas that consistently present difficulties. Students frequently struggle with lexical choice, sentence structure, grammatical agreement, spelling, and the formation of possessive constructions (idāfah) in Malaysian secondary schools and universities (Mansour et al., 2024).

The grammar-translation method, teacher-centered instruction, and rote memorization of rules are some of the traditional pedagogical approaches that have shown limitations in developing the deep conceptual understanding and practical application skills necessary to overcome these grammatical obstacles (Zaki et al., 2024). Arabic morphosyntax's intricacy and abstract character call for methods that go beyond merely taking in information passively. At the same time, there are exciting prospects to develop Arabic language pedagogy due to the quick development and growing accessibility of educational technology (EdTech) (Haq et al., 2024). To target grammatical issues and improve the overall learning experience for Arabic students, it is imperative to investigate and assess the strategic use of contemporary digital and non-digital tools (Al-Mashaqbeh & Neama, 2015).

By offering a thorough examination of the existing situation and the possibilities for technological interventions, this article seeks to advance discussion on enhancing Arabic grammar instruction. It starts by looking at the morphosyntactic challenges that Arabic language learners face. Based on available empirical evidence, the article's core examines different kinds of contemporary educational tools and assesses how well they can address the identified learning challenges. Additionally, it talks about the expected effects of improved grammatical comprehension on learners' overall Arabic proficiency, which includes reading, writing, and speaking abilities as well as affective factors like confidence.

The Arabic Grammar Learning Environment

The root-and-pattern system, a non-concatenative structure at the core of Arabic morphology, derives meaning from the combination of a particular vowel pattern (wazn) and a consonantal root (usually trilateral). Learners must understand abstract morphological rules that govern how roots become interconnected with patterns to form verbs, nouns, and adjectives in this system, which is essentially different from the affixation common in languages like English (Abu-Rabia, 2012). Both vocabulary acquisition and grammatical accuracy are greatly impacted by learners' frequent inability to separate the root consonants from a given word or to apply the proper pattern to a known root to produce the desired word form (ibid). This difficulty is not just lexical; it is a fundamental grammatical challenge because verb conjugation, noun derivation (including verbal nouns and active/passive participles), and plural formation all depend on the proper application of patterns (Taha & Saiegh, 2017). Thus, mistakes made when learning this system can have an indirect impact on proficiency in various grammatical domains.

Understanding Verb Conjugation (Moods, Agreement, and Tenses)

Arabic verb conjugation is commonly intricate, containing a multitude of grammatical information in the verb form itself. For tense (past/perfect, present/imperfect, future), mood (indicative, subjunctive, jussive, imperative), voice (active, passive), person (first, second, third), number (singular, dual, plural), and gender (masculine, feminine), verbs inflect. Each verb has a huge variety of possible forms due to this multifaceted inflection system.

Learners frequently make mistakes with subject-verb agreement rules and tenses, especially the subtle differences between perfect and imperfect aspects (Alasttal, 2025). Because it requires matching the verb to the subject in both gender and number (and person), agreement is especially difficult. Depending on whether the verb comes before or after the subject (a common Arabic VSO structure), there are rules that apply.

The wide variety of irregular verbs, which are classified as weak (having a weak root letter, such as alif, wāw, or yā'), hollow (having a weak middle root letter), or defective (having a weak final root letter), adds even more complexity (Alasttal, 2025). During conjugation, these weak letters frequently change (vowel lengthening, transformation, etc.) or are omitted completely, departing from conventional patterns and necessitating the memorization of rules. Mastering these irregularities is essential for fluency because many common verbs fall into these categories, but it also places a heavy conceptual and memory burden on learners. Understanding the systematic phonological and morphological processes that govern these changes and how they interact with syntactic agreement requirements is just as difficult as memorizing endings.

Comprehending Broken Plurals and Noun Declension (I' rāb)

To indicate grammatical case (nominative -raf', accusative - naṣb, genitive - jarr), number, and definiteness, Arabic nouns and adjectives undergo declension (i' rāb). Vowel endings on the word's final consonant are usually used to indicate these differences. L2 learners find it difficult to acquire i' rāb, even though it is essential to the grammatical structure of both Classical and Modern Standard Arabic (MSA) and is vital for distinguishing roles in sentences. Learners' exposure to the entire system in authentic input is limited because these case endings are typically absent in spoken dialects and frequently unwritten in standard texts, which lack short vowel diacritical marks (Alseraye, 2024). As a result, students may often fail to use the proper case endings when writing formally or when reading aloud.

Another level of complexity is introduced by the Arabic plural system. Many nouns form their plurals irregularly through internal changes to the vowel structure and pattern of the singular stem, although there are regular "sound" plurals formed by suffixation (masculine: نُونْ -ūn / يَنْ -īn; feminine: تَاتْ -āt). These are called "broken" plurals (jam' taksīr - جَمْعُ تَكْسِير). The broken plural pattern that a particular singular noun will adopt cannot be predicted using straightforward, all-inclusive rules. Although there are drawbacks to uncertain algorithms, they still necessitate learning vowel patterns and exceptions, such as metathesis (Zaki et al., 2024). Learners face a substantial cognitive and mnemonic burden due to the system's dual nature (sound vs. broken) and the unpredictable nature of the broken plurals.

Complexities of Syntax (Word Order, Agreement)

There are difficulties with Arabic syntax that go beyond simple word forms. Verb-Subject-Object (VSO) is the standard word order in verbal sentences; speakers of SVO languages, such as English or Malay, are not familiar with this structure. Grammar mistakes or strange phrasing result from L2 learners' frequent incorrect transfer of their native SVO structure (Khalil, 2022).

Arabic has extensive and intricate agreement rules that go beyond straightforward subject-verb agreement. Four requirements must be met by nouns and the adjectives that modify them: case (i' rāb), definiteness (definite/indefinite), gender, and number (Rajan et al., 2024). Additionally, pronouns agree with their antecedents, including possessive and attached object pronouns. One problem is "deflected agreement," in which non-human plural nouns are treated as feminine singular for agreement purposes, irrespective of their singular gender. In both writing and speaking, learners commonly make agreement mistakes (ibid).

The rules governing definiteness in simple versus compound idāfah structures are one of the issues with the idāfah (إضافة) construction, which is used to express possession or genitive relationships (Hamidin, 2019). According to Al-Yaari et al. (2013), learners frequently misapply the definite article (al-) to the construction's first noun (muḍāf).

These syntactic mistakes are rarely isolated; rather, they frequently result from the complex relationship between morphology and syntax. Errors in verb or adjective agreement (syntax) are inevitable when a noun's gender or number (morphology) cannot be accurately determined. Syntactic roles are also obscured when case endings (i' rāb) are misused. One major cause of syntactic errors is interference from the learner's L1 grammar (Alnosairee & Sartini, 2021).

DISCUSSION

Contextual Challenges Among Malaysian Learners

Enhancing Arabic morphosyntax proficiency among Malaysian learners is significantly influenced by a range of contextual challenges beyond the inherent intricacies of Arabic grammar itself. While Arabic morphosyntax involves complex systems such as verb conjugation, gender agreement, and pronoun usage, the learning process is further complicated by second language acquisition issues. These include negative transfer from the learner's first language (L1), typically Malay, where grammatical structures differ significantly from Arabic, leading to incorrect assumptions and usage patterns.

Mazlan et al. (2024) observe that Arabic language learners at Universiti Teknologi MARA (UiTM) in Malaysia have a variety of educational backgrounds, including those who started learning the language in elementary or secondary school, those who have completed college, and those who had no prior exposure before enrolling in tertiary education. Students' overall language skills are impacted since the existing placement system does not sufficiently distinguish between these disparate levels of ability. Therefore, it is crucial to use efficient teaching strategies and tactics to guarantee that every student successfully grasps the course material during their language studies.

Learners may overgeneralize newly acquired second language (L2) rules without fully understanding their exceptions and constraints, as noted by Alnosairee and Sartini (2021). This cognitive challenge is further intensified by the limited availability of immersive and engaging teaching tools. In the Malaysian context, Arabic language education often lacks game-based and multimedia teaching resources, even though students have shown a high level of interest in such methods (Sahrir & Alias, 2011). This mismatch between learner expectations and instructional delivery can lead to decreased motivation and engagement. As a result, educators are increasingly encouraged to explore innovative approaches—particularly through collaborative efforts—to design educational games that promote interactivity and enjoyment in language learning.

Janudin (2009) has conducted research on the application of multimedia technologies in Arabic language education. Among the various benefits they discovered in this technique were the interface components that drew students in as they incorporated images, graphs, colors, varied fonts and words, and appealing, simple, understandable music. Furthermore, graphic elements could pique students' senses, particularly the clear display of images accompanied by texts (Sharifah Fatimah 2013) and mind maps or infographic (Ahmad Fauzi et al. 2022), where students could readily grasp the contents presented, especially the Arabic language knowledge part.

Given the significant impact of technology on teaching and learning, Arabic language instructors should fully embrace innovative tools that transform abstract concepts into engaging experiences. One such approach is the use of audio-visual techniques, such as animations, which can bring lessons to life and make classroom instruction more dynamic and meaningful (Wang et al., 2022).

Moreover, even after several years of instruction, many Malays learners struggle with Arabic writing skills, particularly in areas such as correct spelling, precise lexical choice, and syntactic constructions like *idāfah* phrases (Hamidin, 2019). These persistent errors indicate a deeper issue of ineffective grammar internalization and a need for more targeted support.

Emotional and psychological factors also play a critical role in the learning journey. Learners often experience frustration, anxiety, and a lack of confidence when confronted with the perceived difficulty of Arabic morphosyntax, which can lead to reduced classroom participation and reluctance to speak (Dajani et al., 2014). Motivation, although vital, can wane if learners feel culturally disconnected from the language or do not see its relevance to their personal or professional goals.

Additionally, structural issues within the learning environment pose further barriers. Limited exposure to authentic language use outside the classroom, outdated teaching methodologies, and a general scarcity of contextualized resources limit learners' opportunities to practice and internalize morphosyntactic structures (Almelhes, 2024a).

The phenomenon of diglossia in Arabic where Modern Standard Arabic (MSA) coexists with various dialects—adds another layer of complexity. Learners are often unsure about which form of Arabic to focus on, especially when their classroom instruction does not clearly distinguish between dialectal and formal usage (Wang et al., 2024).

Thus, addressing the contextual challenges of Arabic morphosyntax acquisition among Malaysian learners requires a holistic approach that considers cognitive, emotional, pedagogical, and sociolinguistic dimensions. Educators and curriculum developers must align instructional practices with learner needs, cultural relevance, and technological advancements to foster a more supportive and effective learning environment.

Shortcomings of conventional pedagogy

Despite the advancements in multimedia technology from Web 1.0 to Web 3.0, the teaching and learning of Arabic in the Malaysian context still suffer from a lack of adequate educational tools and resources (Sahrir & Alias, 2011). Ahmad Zaki et al. (2020) highlights that Web 2.0 tools have made Arabic language learning more accessible and flexible, moving beyond traditional teaching methods and encouraging students in developed countries to adopt Arabic as a third language comparable to other foreign languages. Traditional teaching methods frequently continue to be used in secondary and tertiary education settings, including those in Malaysia, despite the acknowledged complexity of Arabic grammar (Zaki et al., 2024). The grammar-translation method, rote memorization, repetition drills (*at-tikrar*), lectures, and other techniques commonly emphasize the explicit teaching of grammatical rules (*qawā'id*) and place the emphasis on the teacher as the main source of knowledge.

Although declarative knowledge, the understanding of the rules may be successfully imparted by these methods, procedural knowledge the capacity to apply the rules effectively and communicative competence are severely limited:

1. **Insufficient Motivation and Engagement:** Teacher-centered approaches, like lectures and drills that only concentrate on form, frequently fall short in terms of actively involving students. Passivity, boredom, a decline in motivation, and a negative attitude toward grammar learning—which is seen as challenging and uninteresting—can result from this (Suryadinata et al., 2024).
2. **Inadequate Application Skills:** Focusing solely on memorization of rules seldom results in the capacity to correctly and appropriately apply those rules in authentic communication contexts (reading, writing, speaking). In controlled exercises, students may be able to identify grammatical structures or recite conjugation tables, but they may find it difficult to comprehend complex structures in real-world texts or to naturally construct grammatically correct sentences (Daud et al., 2022).
3. **Decontextualization:** Grammar rules are frequently taught and practiced without reference to relevant contexts. Instead of interacting with real-world language use, the grammar-translation method, for example, concentrates on translating sentences intended to demonstrate rules (Dajani et al., 2014). Because of this decontextualization, learners find it challenging to comprehend how grammar works to produce meaning in real-world communication.
4. **Ineffectiveness in Fostering Mastery:** Research indicates that students who rely too heavily on these conventional approaches have lower levels of grammar proficiency. They frequently fall short in assisting students in internalizing the intricacies of Arabic syntax and morphology, including irregular conjugations, the root-and-pattern system, and the subtleties of *i'rāb*.
5. **Ignorance of Communicative Goals:** Communication is usually the aim of language learning. In contrast to contemporary methods that prioritize grammar learning in the service of communication, traditional grammar instruction frequently views grammar as an end, separate from communicative functions.
6. **The continued use of these approaches despite their drawbacks emphasizes how urgently Arabic grammar instruction needs pedagogical innovation.** The emphasis must change from simply learning rules to comprehending grammatical ideas and becoming proficient in their accurate and fluid application in meaningful communication.

Using Educational Technology to Promote Better Grammar Learning

Alternative pedagogical tools and approaches must be investigated due to the difficulties in Arabic morphosyntax and the shortcomings of conventional teaching techniques. A wide range of solutions provided by educational technology (EdTech) have the potential to improve the effectiveness, personalization, and engagement of learning Arabic grammar.

Software for Interactive Morphology and Syntax

It is possible to create specialized software programs that specifically address the complexities of Arabic morphology and syntax. These programs can offer interactive environments where students can study and practice grammatical ideas that are frequently difficult. Possible attributes consist of:

1. Root Explorers: Resources that help students understand the root-and-pattern system by letting them enter a word and view its root, pattern, and derived forms.
2. Verb Conjugation Drills: Interactive exercises that provide practice with weak, hollow, and defective verbs as well as the entire range of tenses, moods, voices, persons, numbers, and genders.
3. Pattern visualizers are visual aids that show how roots fit into morphological patterns (awzān).
4. I'rāb Practice: Tasks that emphasize recognizing and using appropriate case endings in various syntactic contexts.
5. Sentence Builders: Resources that help students create grammatically sound sentences by emphasizing word agreement and order.

The primary benefit of interactive software is its capacity to offer prompt, focused feedback on mistakes, enabling students to quickly clear up any misunderstandings (Alahmadi, 2019). In contrast, traditional settings frequently provide delayed feedback. Additionally, software can simplify difficult tasks like conjugation or derivation into smaller, more manageable steps, which eases cognitive load and promotes mastery. Abstract ideas like morphological patterns or syntactic structures can become more tangible and intelligible with the help of visualization features.

Gamification as a Tool for Practice and Motivation

To increase learner motivation and engagement, gamification entails incorporating game mechanics and design principles—such as points, badges, levels, leaderboards, challenges, progress bars, and narrative elements—into educational settings (Almelhes, 2024b). Popular quiz platforms like Kahoot are among the many tools and platforms that have been created or modified for gamified Arabic learning. and Quizizz, apps specifically designed for language learning and specially created educational games such as A-Smart Lu'bah (Ramli et al., 2025).

Making practice less boring and more pleasurable is the main objective of gamification in grammar instruction (Almelhes, 2024b). Gamification can greatly boost students' motivation to complete grammatical exercises, persevere through challenges, and practice more by incorporating aspects of competition, challenge, and reward. This method creates a more positive and engaging learning environment by directly addressing the affective difficulties that grammar learners frequently face, such as boredom and anxiety (Abdelhamid et al., 2023). Although motivation is frequently the focus, skillfully created gamified activities can also directly reinforce vocabulary and grammar rules (ibid). However, rather than merely incorporating flimsy game elements into conventional drills, the efficacy depends on meaningful integration with learning objectives (Luo, 2023).

Conceptual Understanding Visual Aids

Strong methods for representing and elucidating abstract grammatical concepts are provided by visual aids. These can include dynamic digital resources like charts and diagrams as well as more conventional tools like:

1. Concept maps: Showing how different grammatical categories relate to one another (e.g., noun types, verb forms).
2. Color-coding is the process of emphasizing grammatical elements in texts or diagrams, such as gender, case endings, and roots.
3. Multimedia presentations: Using text, pictures, sound, and video to illustrate guidelines and give examples.
4. Animations: Providing dynamic demonstrations of processes such as verb conjugation or sentence transformation.

5. Infographics: Providing grammatical information in an aesthetically pleasing and easily comprehensible manner.

According to studies, audio-visual aids can help students interact more effectively, retain more vocabulary, construct sentences more easily, and develop a more positive view of the language (Brioua et al., 2022). It has been demonstrated that visual grammar tools work well for certain grammatical concepts, such as participle adjectives. The structure of the root-and-pattern system, the intricacies of *idāfah* constructions, sentence diagramming to elucidate syntactic roles and *i'rāb*, and visualizing agreement patterns are all areas in which visual aids can be especially helpful when teaching Arabic (Akmalia & Faizin, 2021). Visual aids can greatly enhance comprehension by giving abstract ideas more tangible form, which accommodates a variety of learning styles.

Empirical Proof of Efficiency

Although empirical research is still in its infancy, especially for Arabic, it is increasingly supporting the potential of these technological tools:

1. Gamification: Numerous research demonstrate that gamification enhances Arabic grammar learning. When compared to control groups that employed traditional methods, the usage of Kahoot! or specially created tools like A-Smart Lu'bah produced significantly higher academic success scores in grammar. These investigations have consistently increased student engagement, and more favorable attitudes toward learning grammar, claim Ramli Ramli et al. (2025). However, some assessments claim that effectiveness varies and is mostly based on how effectively the game is made and how well it fits in with learning goals; simply rewarding rote actions with badges or points may not be sufficient (Luo, 2023).
2. CALL/Interactive Software: Studies on Computer-Assisted Language Learning (CALL) generally show advantages for learning grammar (Alahmadi, 2019) and developing receptive skills such as vocabulary and grammar knowledge. Grammatical feature learning has been enhanced by certain interventions, such as the use of visual grammar tools (Qadha & Al-Wasy, 2022).
3. Visual Aids: It has been discovered that using audio-visual aids in online Arabic instruction improves student interaction, academic performance, vocabulary, and sentence construction skills (Brioua et al., 2022).

Empirical evidence generally supports the notion that various types of educational technology can be more effective than purely traditional methods for teaching and learning Arabic grammar. Such tools are particularly useful for providing context to grammar concepts, increasing learner motivation, and enabling personalized practice. However, it is important to recognize that technology is not a universal solution; its success depends on factors such as the learning environment, teacher readiness, sound pedagogical integration, and thoughtful design. More comprehensive, in-depth, and long-term studies are still needed to fully understand the lasting impacts and optimal approaches for applying these technologies in Arabic grammar education.

Possible Effects on General Arabic Proficiency

It is anticipated that enhancing students' understanding of Arabic nouns and verbs through efficient teaching strategies, such as incorporating educational technology, will improve their language skills overall. The foundation for all other language skills is a mastery of morphosyntax.

Connecting Reading Comprehension and Grammar Proficiency

The reader's ability to correctly parse morphological and syntactic structures is crucial for reading comprehension in Arabic, especially when reading texts that lack short vowel diacritical marks, which is common. Based on context and morphological patterns, readers with grammatical knowledge can distinguish between words that have the same consonant skeleton but different meanings or functions (e.g., distinguishing between verb forms or noun cases). Comprehension can be hampered by difficulties with

complex morphology or syntax, which can greatly slow down word recognition and sentence processing (Hussien, 2014). Both L1 and L2 Arabic learners' morphological awareness, syntactic knowledge, and reading comprehension skills have been shown to correlate in studies (Alsabatin et al., 2023). Thus, instructional resources that successfully improve students' comprehension and processing of Arabic verbs, nouns, and sentence structures are probably going to have a direct impact on their ability to read and comprehend. Learners can devote more mental energy to comprehending the text's meaning when they are able to decode grammatical structures more automatically.

Linking Writing and Speaking Fluency to Grammar Accuracy

Accurate use of grammar rules is necessary for productive skills like speaking and writing to communicate effectively. In the output of L2 learners, grammatical errors pertaining to morphology (e.g., incorrect verb conjugations, incorrect plural forms, improper derivations) and syntax (e.g., faulty subject-verb or noun-adjective agreement, incorrect word order, misuse of prepositions, flawed idafa constructions) are common. Thus, being able to write and speak in a clear, accurate, and understandable manner requires a solid command of grammar. Improved spelling accuracy has been associated with morphological knowledge (Abu-Rabia, 2012).

These errors can be directly addressed by educational technologies that offer focused practice, pinpoint specific mistakes, and provide instantaneous corrective feedback, resulting in more grammatically sound speaking and writing (Alahmadi, 2019). Grammatical accuracy offers the fundamental framework for understandable communication, even though fluency encompasses elements other than grammar (such as vocabulary access, processing speed, and confidence). It may be possible to increase fluency and facilitate smoother production in both writing and speaking by lowering the cognitive load related to deliberately retrieving and applying intricate grammar rules. Fluency is further facilitated by increased confidence, which is frequently the result of increased accuracy.

Increasing Student Self-Belief and Lowering Anxiety

Arabic grammar's intrinsic difficulty frequently causes learners to experience negative affective reactions, such as frustration, anxiety (particularly performance anxiety when speaking), and low self-esteem (Mansour et al., 2024). These affective barriers have the potential to seriously impede learning progress and deter students from practicing or actively participating.

There are various ways to lessen these unfavorable emotions with educational technology. By incorporating features like points, rewards, and low-stakes challenges, gamified learning environments can boost intrinsic motivation, lessen error-related anxiety, and make grammar practice more enjoyable (Almelhes, 2024b). With interactive tools that offer instantaneous, confidential feedback, students can spot and fix errors without worrying about being judged in public by their peers or teachers. EdTech can improve learners' attitudes toward grammar study, increase their self-efficacy, and promote greater persistence and participation by developing more encouraging, engaging, and less intimidating learning experiences.

This approach is also practical and highly relevant in the Malaysian context, where Arabic is taught as a second or foreign language in schools and universities. By leveraging gamification and educational technologies, educators in Malaysia can address learners' emotional challenges more effectively, increase classroom engagement, and create a more supportive environment for mastering complex grammatical concepts.

CONCLUSION

Learning Arabic morphosyntax, which encompasses the intricacies of the root-and-pattern system, verb conjugation, noun declension, broken plurals, and syntactic agreement, continues to be a significant obstacle for many students, particularly non-native speakers like Malaysian. Traditional pedagogical approaches, which usually rely on teacher-centered delivery and decontextualized rule memorization, have not always consistently fostered the deep understanding and application skills necessary for proficiency. This review

emphasizes the substantial potential of modern educational technologies to address these persistent problems. Through interactive software, gamification platforms, multimedia and visual aids, there are numerous ways to provide targeted practice, enhance learner motivation and engagement, present grammar in authentic contexts, and personalize the learning experience. Even though it is still in its infancy, empirical data is starting to demonstrate how beneficial these resources are for improving aspects of learning Arabic grammar and helping students develop more positive attitudes when compared to traditional methods alone. Therefore, enhancing Arabic language pedagogy, especially in the Malaysian context requires the use of well-designed educational technology, making it more than just a choice.

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REFERENCES

1. Abdelhamid, I. Y., Yahaya, H., & Shaharuddin, H. N. (2023). Assessing the impact of gamification on academic achievement and student perceptions of learning Arabic grammar: A quasi-experimental study. *International Journal of Academic Research in Business and Social Sciences*, 13(5), 760–773.
2. Abu-Rabia, S. (2012). The role of Morphology and short vowelization in reading Morphological Complex Words in Arabic: Evidence for the domination of the Morpheme/Root-Based Theory in Reading Arabic. *Creative Education*, 03(04), 486–494.
3. Ahmad Fauzi, A., Anas, N., Baharom, S.N. & Yaacob, Z. (2022). Infographics as an alternative da'wah medium during covid-19 crisis. *Islamiyyat* 44(1): 101–113.
4. Ahmad Zaki Amiruddin, Zulazhan Ab. Halim, & Nurkhamimi Zainuddin. 2020. Kesiediaan pelajar generals' Z di Universiti Malaysia Kelantan dalam pembelajaran teradun bahasa Arab dalam era IR4.0. *Journal of Islamic Social Sciences and Humanities* 22(1): 86-95.
5. Akmalia, F., & Faizin, K. (2021). The effectiveness of Al-Qawā'id wa Al-Tarjamah method on improving Arabic grammar mastery among non-Arabic learners. *Ijaz Arabi: Journal of Arabic Learning*, 7(3), 19–35.
6. Alahmadi, N. S. (2019). The impact of computer-assisted language learning (CALL) on grammar acquisition by Saudi learners. *International Journal of Language and Linguistics*, 6(4), 151–158.
7. Alasttal, T.(2025). "Mood in English and Arabic: A Contrastive Study." *International Journal of Linguistics, Literature and Translation*, 8,(1), 12-21.
8. Al-Mashaqbeh, I.F., & Neama, M. (2015). The Effect of Computerized Instructional Program in the Intermediate First Grade Students Achievement in Arabic language Grammar in Iraq. *Journal of Education and Practice*, 6, 21-26.
9. Almelhes, S. (2024a). Enhancing Arabic language acquisition: Effective strategies for addressing non-native learners' challenges. *Education Sciences*, 14(10), 1116.
10. Almelhes, S. A. (2024b). Gamification for teaching the Arabic language to non-native speakers: A systematic literature review. *Frontiers in Education*, 9, Article 1371955.
11. Alnosairee, A. H. A., & Sartini, N. W. (2021). A sociolinguistics study in Arabic dialects. *PRASASTI: Journal of Linguistics*, 6(1), 1–17.
12. Alsabatin, H., Nureldeen, W., Eskander, R., Nasr, W. (2023). Arab EFL Learners' Reading Ability in English and Arabic. *Eurasian Journal of Applied Linguistics*, 9(3), 113-121.
13. Alseraye, A. M. S. (2024). L2 Arabic learners' processing of Arabic garden-path sentences: a consistent reading pattern. *Frontiers in Psychology*, 15.
14. Al-Yaari, S. A. S., Al Hammadi, F. S., & Alyami, S. A. (2013). Written grammatical errors of Arabic as second language (ASL) learners: An evaluative study. *International Journal of English Language Education*, 1(2), 143–145.
15. Brioua, N., Osman, R. A. H., & Mahmoud, A. R. A. (2022). Online teaching challenges: The role of created audiovisual aids in teaching Arabic to non-Arab speakers at schools. *International Journal of Early Childhood Special Education (INT-JECSE)*. Advance online publication.

16. Dajani, B. a. S., Mubaideen, S., & Omari, F. M. A. (2014). Difficulties of learning Arabic for non-native speakers. *Procedia - Social and Behavioral Sciences*, 114, 919–926.
17. Daud, A. F. C., Mustapha, N. F., Toklubok, P. H., Jabar, M. A. A., & Mohamad, A. H. (2022). Problems in Arabic Writing Skills among Malay Students in Malaysia: A Review. *International Journal of Academic Research in Business and Social Sciences*, 12(1), 2028–2039.
18. Hamadan, N. M. (2019). Challenges in teaching and learning Arabic language in secondary school: Students', teachers' and parents' view. *e-Bangi: Journal of Social Sciences & Humanities*, 16(2), 1–14.
19. Haq, A. Z., Akmansyah, M., Erlina, E., & Koderi, K. (2024). Technology integration in arabic language learning: A literature review on the effectiveness of e-learning and mobile applications. *Journal of Research in Instructional*, 4(2).
20. Hussien, A. M. (2014). The effect of learning English (L2) on learning of Arabic literacy (L1) in the primary school. *International Education Studies*, 7(3), 88–98.
21. Janudin Sardi. (2009). Pembelajaran nahu dalam bahasa arab komunikasi menggunakan aplikasi multimedia berasaskan web. Tesis Ijazah Doctor Falsafah. Faculty Bahasa dan Linguistik, Universiti Malaya.
22. Khalil, B. (2022). Negative Transfer from Arabic as a Major Reason for the Errors Made by Arabic Learners in their Written Production in English as a Second Language. (Dissertation). Institutionen för Kultur och Lärande.
23. Luo, Z. (2023). The effectiveness of gamified tools for foreign language learning (FLL): A systematic review. *Behavioral Sciences*, 13(4), 331.
24. Mansour, M.S.A., Sulong, W.M, Hasan, A.B., & Hajimaming, P. (2024). Impact of Linguistic Problems on Learning Arabic Speaking Skills among Non-Native Arabic- Speaking Students.
25. Mazlan, N. A., Saja, I., Surtahman, A. W., Norwahi, N. A., & Maghfurin, A. (2024). The effectiveness of multimedia usage in learning Arabic (foreign language) based on student score achievement. *Islāmiyyāt: Journal Antarabangsa Pengajian Islam dan Ketamadunan*, 46(2), 66–78.
26. Qadha, A. M., & Al-Wasy, B. Q. (2022). The impact of implementing visual grammar on learning participle adjectives by EFL learners. *PSU Research Review*, 8(2), 455–466.
27. Rajan, P. B., Makarevicius, A., & Hartrup, P. (2024). Exploring Arabic Learners' English Errors Interlingual vs. Intralingual Analysis and Remedial Teaching Strategies. *Academicus International Scientific Journal*, 15(30), Article 09.
28. Ramli, S., Abdul Ghani, M. T., & Awang Hamat, M. Z. (2025). Development of A-Smart Lu'bah: An Arabic language gamification for teaching grammar based on sentence pattern formula modules. *International Journal of Research and Innovation in Social Science*, 9(3S), 388–397.
29. Sahrir, M. S., & Alias, N. A. (2011). A study on Malaysian language learners' perception towards learning Arabic via online games. *GEMA Online Journal of Language Studies*, 11(3), 129–145.
30. Sharifah Fatimah Wan Jamel. 2013. Penggunaan multimedia dalam pengajaran bahasa Arab: Satu kajian kes. Tesis Ijazah Doctor Falsafah, Faculty Bahasa dan Linguistik, Universiti Malaya, Kuala Lumpur.
31. Suryadinata, Irsyadi, A. N., Zarkasi, Rosyidi, M. H., & Agustina, Y. D. (2024). The challenge of mastering Arabic language and its relation to the ability to read Kitab Kuning among students in Tapal Kuda Islamic boarding school. *Retorika: Journal Ilmu Bahasa*, 10(3), 802–815.
32. Taha, H., Saiegh-Haddad, E. Morphology and Spelling in Arabic: Development and Interface. *J Psycholinguist Res* 46, 27–38 (2017).
33. Wang, S., Politis, A., Mesaros, A., & Virtanen Tuomas. (2022). Self-supervised learning of audio representations from audio-visual data using spatial alignment. *IEEE Journal of Selected Topics in Signal Processing* 16(6): 1467–1475.
34. Wang, X. J., Baharudin, H., & Awang, M. M. (2024). Guessing meaning strategies and Arabic reading comprehension ability among Chinese college students. *Ijaz Arabi: Journal of Arabic Learning*, 7(3), 804–818.
35. Zaki, M. F. M., Ismail, U. S., Radzi, A. H. M., & Pisal, N. A. (2024). Teaching methods of Arabic language grammar lessons among Arabic teachers at religious secondary schools in Malaysia. *Theory and Practice in Language Studies*, 14(10), 3100–3108.