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A SYSTEMATIC REVIEW OF EDUCATIONAL BOARD GAMES FOR FOREIGN LANGUAGE LEARNING

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Abstract

The development of educational technology has encouraged the emergence of more interactive, student-oriented learning innovations. However, a systematic review of the application of board game-based GBL in Arabic vocabulary learning is still limited. Through the method Systematic Literature Review Using the PRISMA model, this study examines the characteristics, outcomes, and opportunities for developing GBL in the context of foreign language learning, particularly Arabic. Twenty-one selected articles published between 2015 and 2024 were analysed thematically. The study results indicate that Educational Board Games is effective in improving vocabulary mastery, motivation, and learning collaboration. Key challenges include time constraints, teacher readiness, and curriculum support. Integration of principles, Mastery Learning and digital-hybrid game design were identified as potential directions for further development. This study contributes to strengthening pedagogical strategies for Arabic language learning through innovative and contextual game-based approaches.
Keywords: *Game-Based Learning, Board Games, Vocabulary, Arabic, Systematic Literature Review.*

Abstrak

Perkembangan teknologi pendidikan telah mendorong munculnya inovasi pembelajaran yang lebih interaktif dan berorientasi pada siswa. Namun, tinjauan sistematis terhadap penerapan GBL berbasis permainan papan dalam pembelajaran kosakata bahasa Arab masih terbatas. Melalui metode Tinjauan Literatur Sistematis Dengan menggunakan model PRISMA, penelitian ini mengkaji karakteristik, hasil, dan peluang untuk mengembangkan GBL dalam konteks pembelajaran bahasa asing, khususnya bahasa Arab. Dua puluh satu artikel terpilih yang diterbitkan antara 2015 dan 2024 dianalisis secara tematik. Hasil penelitian menunjukkan bahwa Educational Board Games efektif dalam meningkatkan penguasaan kosakata, motivasi, dan kolaborasi belajar. Tantangan utama termasuk keterbatasan waktu, kesiapan guru, dan dukungan kurikulum. Integrasi prinsip, Mastery Learning dan desain game digital-hybrid diidentifikasi sebagai arah potensial untuk pengembangan lebih lanjut. Studi ini berkontribusi pada penguatan strategi pedagogis untuk pembelajaran bahasa Arab melalui pendekatan berbasis permainan yang inovatif dan kontekstual.
Kata Kunci: *Pembelajaran Berbasis Permainan, Permainan Papan, Kosakata, Bahasa Arab, Tinjauan Literatur Sistematis.*

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INTRODUCTION

Over the past two decades, the rapid advancement of technology and the continuous evolution of pedagogical approaches have fostered the development of more interactive, engaging, and learner-centred educational strategies. Among these, Game-Based Learning (GBL) has emerged as a prominent instructional approach that integrates game mechanics and dynamics to achieve educational objectives. A growing body of research has shown that GBL can significantly enhance learners' motivation, engagement, and knowledge retention compared to conventional teaching methods.[1]

In the field of language education, GBL has been widely acknowledged for its ability to provide contextualised and meaningful learning experiences. Vocabulary acquisition, as a fundamental component of language proficiency, particularly benefits from interactive learning environments that encourage repeated exposure and active use of target words. Through games, learners can practice vocabulary in an enjoyable, purposeful, and socially meaningful way, thereby reinforcing memory retention and facilitating the transfer of lexical knowledge into authentic communicative contexts.[2]

Despite the well-documented advantages of GBL in language learning, the majority of existing research has predominantly focused on English language instruction and the use of digital games. Studies investigating the implementation of board game-based GBL in Arabic language education remain limited. Yet, board games offer distinctive pedagogical affordances: they promote face-to-face social interaction, collaboration, and healthy competition, while allowing the integration of cultural and multicultural values relevant to local educational settings such as Indonesia.

Furthermore, much of the previous research in this area has primarily emphasised learners' motivation and perceptions rather than providing systematic empirical evidence regarding the impact of GBL on vocabulary mastery. This lack of comprehensive synthesis underscores the need for a systematic review that maps existing research on how board game-based GBL has been implemented in Arabic vocabulary instruction and how it contributes to learning outcomes. Accordingly, the present study aims to conduct a Systematic Literature Review (SLR) to examine the implementation of board game-based GBL in enhancing Arabic vocabulary mastery. This review follows the PRISMA guidelines to ensure transparency and rigour in the literature search and selection process and employs thematic analysis to identify

[1] Jan L. Plass, Bruce D. Homer, and Charles K. Kinzer, "Foundations of Game-Based Learning," *Educational Psychologist* 50, no. 4 (2015): 258–83.

[2] I. S. P. Nation, *Learning Vocabulary in Another Language* (Cambridge: Cambridge University Press, 2013).

recurring themes, implementation patterns, and empirical findings concerning the effectiveness of GBL strategies.[3]

Research Questions (RQs)

To guide the review process, this study addresses the following research questions:

RQ1. What are the characteristics of Educational Board Games implementations in Arabic vocabulary instruction?

RQ2. What impacts do Educational Board Games interventions have on Arabic vocabulary mastery, learner motivation, and collaborative engagement?

RQ3. What challenges and opportunities are identified in the implementation and further development of Educational Board Games?

The findings of this study are expected to provide a comprehensive overview of current trends, pedagogical practices, and challenges in implementing GBL for Arabic vocabulary learning. Moreover, they are anticipated to contribute theoretical insights and practical implications for developing innovative, culturally responsive, and evidence-based instructional models in future research and practice. This article is organised into four main sections: (1) the methodology of literature search and selection, (2) results of the thematic analysis, (3) discussion and implications of the findings, and (4) conclusions and directions for future research.

Game-Based Learning (GBL) is an instructional approach that integrates game elements and mechanics into the learning process to achieve specific educational objective.[4] Grounded in experiential learning theory and constructivist principles, GBL emphasises active participation, reflection, and knowledge construction through meaningful experiences. In the context of language education, GBL creates authentic situations that require learners to think critically, make decisions, and use the target language in purposeful communication, thereby enhancing motivation and long-term retention.[5]

Among the various forms of GBL, board games offer distinctive pedagogical advantages for vocabulary learning. Their design fosters face-to-face interaction, collaboration, and healthy competition, allowing learners to practice vocabulary repeatedly and meaningfully.[6] Structured gameplay, clear rules, and engaging mechanics contribute to cognitive and emotional

[3] Virginia Braun and Victoria Clarke, "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology* 3, no. 2 (2006): 77–101, https://doi.org/10.1191/1478088706qp063oa.

[4] James Paul Gee, *What Video Games Have to Teach Us about Learning and Literacy* (New York: Palgrave Macmillan, 2007).

[5] Jean Piaget and Bärbel Inhelder, *The Psychology of the Child* (New York: Basic Books, 1972).

[6] José P. Zagal, Jochen Rick, and Idris Hsi, "Collaborative Games: Lessons Learned from Board Games," *Simulation & Gaming* 37, no. 1 (2006): 24–40.

involvement, which are essential for vocabulary retention.[7] In Arabic language learning, where traditional instruction often relies on rote memorisation and isolated drills, Educational Board Games provides a more interactive and contextual alternative.[8] By embedding vocabulary learning within enjoyable play activities, it encourages active participation, curiosity, and deeper semantic understanding.[9]

Implementing GBL in Arabic language classrooms presents several challenges, including the scarcity of culturally relevant materials, limited teacher expertise in game design, and inadequate institutional support.[10] Recent technological advances, however, have opened opportunities for hybrid and digital board games such as *Ludo Genially* that can be adapted to learners' needs and local cultural values. These innovations extend GBL's potential beyond entertainment, positioning board game-based approaches as effective tools to enhance vocabulary mastery, motivation, and communicative competence in Arabic language education.

RESEARCH METHODS

This study employed a Systematic Literature Review (SLR) approach to identify, evaluate, and synthesise research findings related to the implementation of Educational Board Games in Arabic vocabulary instruction. This method was chosen because it enables a systematic, transparent, and replicable process for exploring scientific literature, thereby minimising researcher bias and enhancing the validity and reliability of the findings.[11]

Following the PRISMA framework, the review process was conducted through four key stages: identification, screening, eligibility assessment, and final inclusion. The PRISMA model provides standardised reporting guidelines for systematic reviews and meta-analyses, ensuring methodological rigour, transparency, and replicability throughout the entire review process.[12]

In addition, this SLR incorporated a thematic qualitative analysis to identify recurring patterns in the implementation of Educational Board Games strategies, their effectiveness in vocabulary acquisition, and the challenges and opportunities for their development in Arabic language learning contexts. The integration of these two approaches allowed for both an in-depth content synthesis and a comprehensive mapping of current research trends and gaps.

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[7] Dimitrios Vlachopoulos and Agoritsa Makri, "The Effect of Games and Simulations on Higher Education: A Systematic Literature Review," *International Journal of Educational Technology in Higher Education* 14, no. 1 (2017): 22.

[8] Matthew J. Page et al., "The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews," *BMJ* 372 (2021): n71, https://doi.org/10.1136/bmj.n71.

[9] Rahma Al-Mahrooqi and Christopher Denman, eds., *Issues in English Education in the Arab World* (Newcastle upon Tyne: Cambridge Scholars Publishing, 2015).

[10] N. Aisyah and R. Rahman, "Application of Educational Game Media in Arabic Language Learning in Elementary Schools," *Journal of Arabic Language Education* 10, no. 2 (2023): 134–45.

[11] Julian P. T. Higgins et al., eds., *Cochrane Handbook for Systematic Reviews of Interventions*, version 6.2 (London: Cochrane, 2021), https://training.cochrane.org/handbook.

[12] Page et al., "PRISMA 2020 Statement."

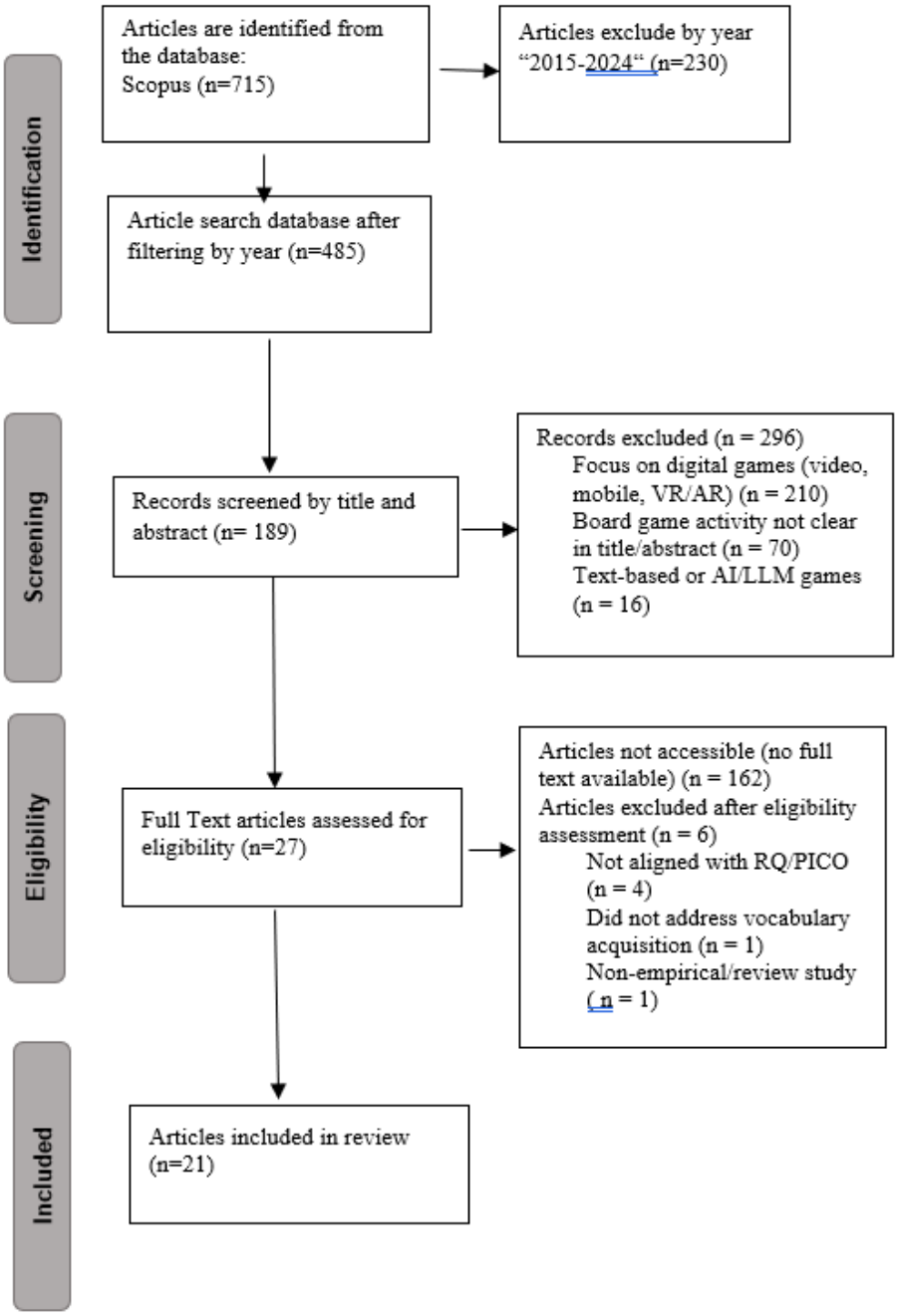


Figure 1**.** Systematic literature review information flow using PRISMA

Source: Authors' search results.

This review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, which consists of four key stages: identification, screening, eligibility, and inclusion. The application of the PRISMA protocol ensured that the entire review process was conducted transparently, systematically, and replicably. Figure 1 illustrates the article selection flow based on the PRISMA model. Articles were identified through the Scopus database using the following Boolean search string : ("game-based learning" OR "educational game" OR

"board game" OR "tabletop game" OR "serious game") AND ("language learning" OR "vocabulary learning" OR "language acquisition" OR "word learning").

The initial search yielded 715 articles. To maintain relevance with recent pedagogical and technological developments, the results were restricted to publications from 2015 to 2025, reducing the dataset by 230 articles and leaving 485 studies for the initial screening.

During the screening stage, selection was based on titles and abstracts, yielding 189 potentially relevant articles. A total of 296 articles were excluded for not aligning with the study's focus specifically those (a) emphasizing digital games such as video, mobile, or VR/AR games (n = 210), (b) lacking clear references to board game activities (n = 70), or (c) centering on text-based or AI/LLM interactions (n = 16).

At the eligibility stage, 27 full-text articles were retrieved and reviewed in detail. Of these, six were excluded because they lacked empirical data, did not discuss vocabulary mastery, or were conceptual rather than empirical. Consequently, 21 articles met all inclusion criteria and were selected as the primary sources for the thematic analysis.

Table 1**.** Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Focus on learning Arabic or a foreign language	Articles outside the field of language education
Implementing the strategy, a *Game-Based Learning* board game based	Focus on digital gaming (video games, mobile, VR/AR)
Display empirical results or descriptions of learning implementation	Non-empirical, conceptual, or literature review articles
Presenting data relevant to vocabulary learning	Does not discuss vocabulary mastery
Articles are in English or Indonesian and are available in full text.	The article does not have full-text access full *text.*

Source: Authors' review protocol.

The inclusion criteria applied in this study were as follows:

1. articles published between 2015 and 2025;
2. written in English or Indonesian and available in full text; and
3. focused on the implementation of Educational Board Games in Arabic or foreign language vocabulary instruction.

All studies meeting these criteria were analysed to examine their implementation strategies, learning outcomes, and contributions to vocabulary mastery. Conversely, studies were excluded if they (a) did not focus on language learning, (b) examined digital games such as video games or mobile applications, (c) were conceptual or non-empirical in nature, or (d) did not report vocabulary-related findings. These criteria ensured that only empirically grounded and contextually relevant studies were included in the synthesis.

All selected articles were analysed qualitatively using a thematic approach. Each study was reviewed in terms of research objectives, design, participants, learning context,

implementation strategies, and key outcomes. This analytical process made it possible to identify recurring patterns, effective instructional practices, and research gaps related to the application of Educational Board Games in Arabic vocabulary learning.

Adopting the Systematic Literature Review (SLR) approach under the PRISMA framework provided a robust empirical foundation for mapping current research developments, evaluating the effectiveness of game-based learning strategies, and exploring the potential of innovative, learner-centred instructional media. The systematic and transparent process covering all stages from literature search to article selection enhanced the reliability and replicability of the synthesis.[13]

This methodological approach is expected to generate a comprehensive understanding of the pedagogical role of board games as a medium for language learning, particularly in enhancing learner motivation, engagement, and vocabulary achievement. Furthermore, the review offers contextual insights and theoretical directions for future research in Arabic language education.

RESULTS AND DISCUSSION

The results of this study are organised based on the three research questions guiding this review. Drawing on evidence synthesised from 21 selected articles, the first part of the findings provides a descriptive overview of how educational board games have been implemented across various instructional settings. The second part summarises the reported impacts of these implementations on Arabic vocabulary mastery, learner motivation, and collaborative engagement. The final part identifies key challenges noted in previous studies as well as emerging opportunities for advancing the design and application of educational board games. Collectively, these results address the research questions regarding the characteristics of educational board game implementations, their pedagogical effects, and the challenges and opportunities that inform future development in this field.

Characteristics of Game-Based Learning Implementation of Board Games.

Analysis of the 21 selected articles showed that the implementation of GBL based on board games in learning Arabic vocabulary and foreign languages has four main characteristics, namely: (1) the type of game used, (2) the level of target education, (3) the approach and design of the research, and (4) the context of the language studied. These four aspects provide a comprehensive overview of the variations in the application of GBL as an interactive and student-centred approach.

Most of the research used adaptations of classic board games such as Ludo, Scrabble, Domino Words, WordQuest, and Snakes and Ladders. Several other studies developed narrative

[13] Page et al., "PRISMA 2020 Statement."

and collaborative games such as Dixit and augmented reality-based Escape Classroom Games.[14] In addition, digital hybrid games such as Genially Ludo, Wordwall, and TRIP-a-Bike have also emerged.[15] This pattern shows that board game-based GBL is evolving towards an interactive, narrative, and technology-based learning model

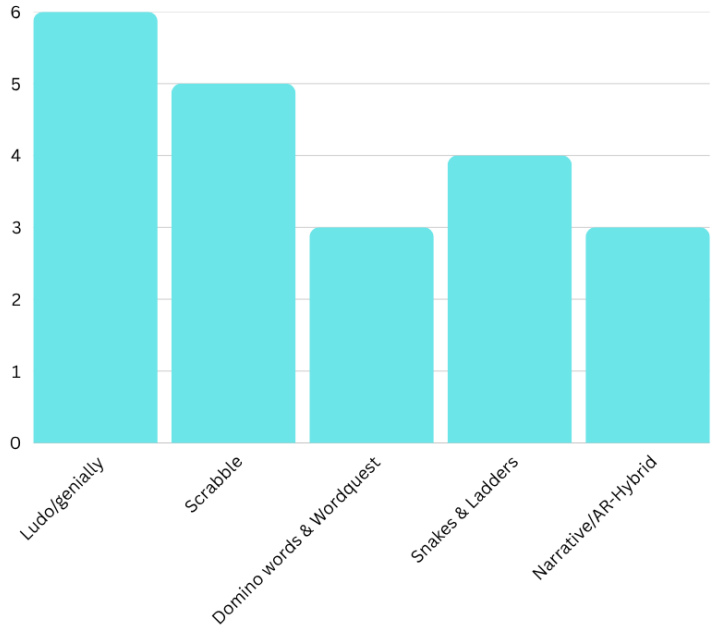


Figure 2. Types of board games used in the reviewed studies

Source: Authors' synthesis of the reviewed studies.

The most implementation was found in primary (43%) and secondary schools (29%), followed by college (19%) and non-formal/adult education (9%). The dominance at the primary and secondary levels shows that game-based GBL is more effective for children and adolescents who learn through concrete and collaborative experiences. However, some studies show that this model is also beginning to be applied effectively to adult learners.[16]

[14] Angeliki Voreopoulou, Stylianos Mystakidis, and Avgoustos Tsinakos, "Augmented Reality Escape Classroom Game for Deep and Meaningful English Language Learning," *Computers* 13, no. 1 (2024): 24, https://doi.org/10.3390/computers13010024.

[15] Santolo Ciccarelli et al., "TRIP a-Bike: An Interactive Educational System for Learning English as a Second Language," in *Proceedings of the 22nd LACCEI International Multi-Conference for Engineering, Education, and Technology* (San José, Costa Rica: LACCEI, 2024), https://doi.org/10.18687/LACCEI2024.1.1.1873.

[16] Marina Mattheoudakis and Niki Panteliou, "Using Board Games to Practice Grammar in Adult Foreign Language Classrooms: The Case of 'Dixit,'" in *Board Games in the CLIL Classroom: New Trends in Content and Language Integrated Learning*, ed. Thomai Alexiou and Athanasios Karasimos (Berlin: De Gruyter, 2023), 27–46.

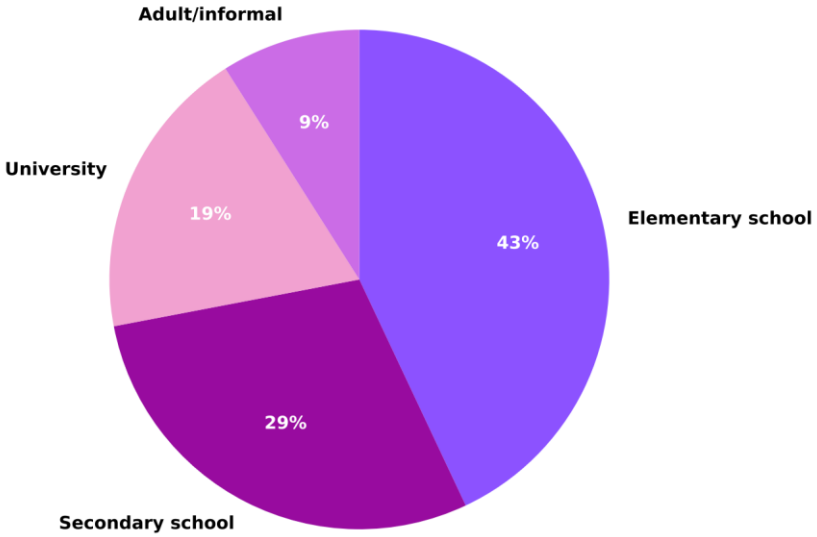


Figure 3. Distribution of educational levels in board-game-based Game-Based Learning (GBL) implementation

Source: Authors' synthesis of the reviewed studies.

Most studies (57%) used quasi-experimental designs to measure the effectiveness of games on learning outcomes. As many as 29% apply an R&D approach, and another 14% use mixed-methods or case studies. These results show that research in this area is starting to move from a results-testing approach towards an innovative design approach that is more contextual and reflective.

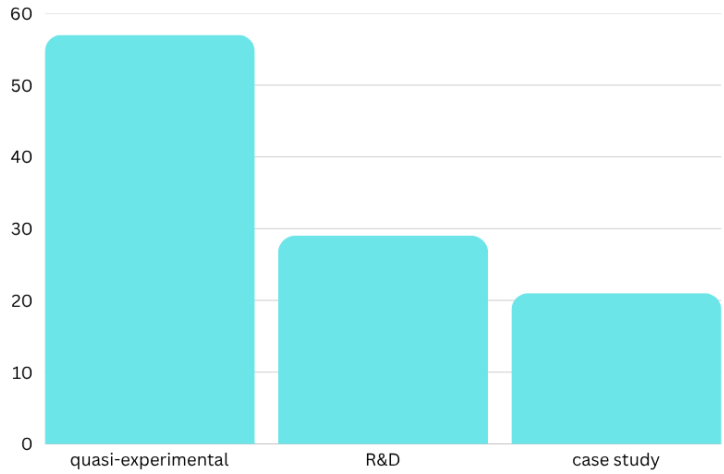


Figure 4. Distribution of research designs used in studies implementing educational board games, including quasi-experimental, R&D, mixed-methods, and case-study approaches

Source: Authors' synthesis of the reviewed studies.

English is the most dominant research context (57%), followed by Chinese (14%), Arabic (14%), Japanese (9%), and Greek (5%). Research on Arabic is still limited, but it is beginning to develop through the adaptation of games that raise elements of local culture, such as Ludo Arabic and Snakes and Ladders Language.[17]

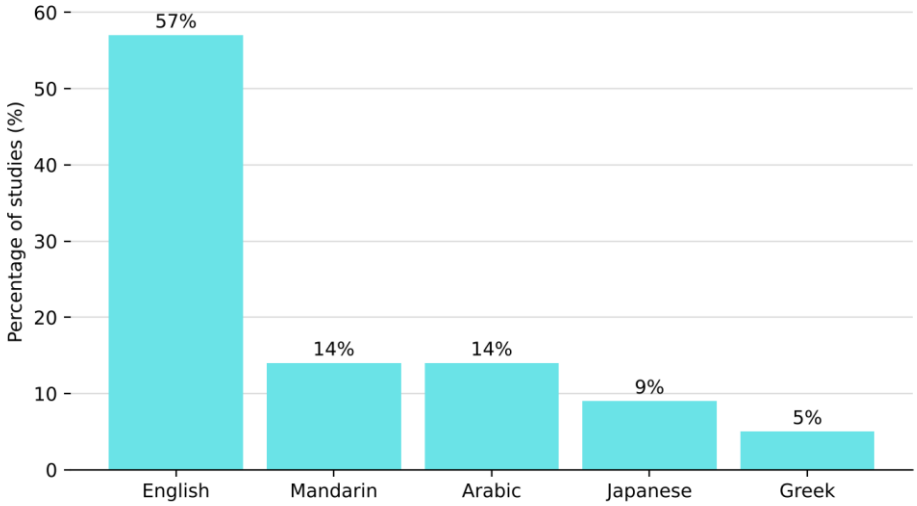


Figure 5. Distribution of language contexts examined in the reviewed studies, including English, Mandarin, Arabic, Japanese, and Greek

Source: Authors' synthesis of the reviewed studies.

The synthesis of the results of the analysis of 21 articles is presented in Table 2 below, which summarises the characteristics of the implementation of board game-based GBL in various language contexts and educational levels.

Table 2. Summary of the characteristics of board-game-based Game-Based Learning (GBL) implementation across various language learning contexts and educational levels.

Researcher & Year	Type of Game/Media	Context & Level of Education	Research Methods	Key Findings (Implementation Characteristics)
Mattheoudakis & Panteliou (2023)	*Dixit* (naratif)	Adult – Greek L2	Quasi-experiment	Narrative games improve contextual communication and grammar reflection
Voreopoulou et al. (2024)	*AR Escape Classroom Game*	College – English	Mixed	AR enhances collaboration and deep learning engagement.
Mustika et al. (2015)	*Camera OCR Board Game*	High School – Indonesian L2	R&D	Text camera games as an alternative vocabulary assessment.
Hasram et al. (2021)	*Wordwall*	Elementary – English	Quasi-experiment	Improve vocabulary mastery and learning engagement.

[17] Abdulrahman M. Alshabeb, "Learning Vocabulary via Video Games: A Case Study of Saudi University Students," *Arab World English Journal* 15, no. 3 (2024): 321–32, https://doi.org/10.24093/awej/vol15no3.19.

Researcher & Year	Type of Game/Media	Context & Level of Education	Research Methods	Key Findings (Implementation Characteristics)
Papadopoulos et al. (2015)	*Tabletop Surface Game*	PAUD – Arabic	Quasi-experiment	Interactive board games improve the introduction of Arabic letters.
Frolli et al. (2023)	*Digital Card Game*	Elementary – Italian L2	Quasi-experiment	Increased motivation and vocabulary retention.

Source: Authors' synthesis of the reviewed studies.

Based on the results of the analysis, the implementation of GBL based on board games shows the direction of development towards an interactive, collaborative, and real-experience learning model. This approach not only strengthens cognitive vocabulary mastery but also fosters intrinsic motivation, social interaction, and emotional involvement in the learning process. In addition, recent research shows a tendency to integrate digital and augmented reality technologies into board game design, expanding the potential application of GBL to a wide range of language contexts, including Arabic. Thus, the main characteristics of the implementation of GBL board-game-based learning reflect the paradigm shift in learning from conventional approaches to experiential learning strategies, reflections, and collaborations that are adaptive to technological developments.

The Impact of Board-Game-Based Game-Based Learning (GBL) on Vocabulary Mastery and Motivation

The results of the synthesis of 21 articles show that the implementation of Game-Based Learning based on board games has a consistent positive impact on vocabulary mastery (cognitive gain), motivation and learning engagement (affective engagement), and social cooperation between students (social collaboration). This impact can be seen at various levels of education and language contexts, both in child learners and students.

Increased Vocabulary Mastery (Cognitive Gain)

Most studies (85% of the total studies) showed a significant improvement in vocabulary test results after the implementation of GBL board-game-based learning. Games such as Scrabble, Ludo Arabic, WordQuest, and Domino Words allow learners to practice word repetition in a contextual and fun way, thus strengthening long-term memory. Research by Liu et al.[18] shows that the use of competitive modes in games improves vocabulary retention through scoring mechanisms and direct feedback. Similarly, Hasram et al.[19] proved that Wordwall games are

[18] Yu-Jiao Liu et al., "Impact Study of the Learning Effects and Motivation of Competitive Modes in Gamified Learning," *Sustainability* 14, no. 11 (2022): 6626, https://doi.org/10.3390/su14116626.

[19] Syafiqah Hasram et al., "The Effects of WordWall Online Games (WOW) on English Language Vocabulary Learning among Year 5 Pupils," *Theory and Practice in Language Studies* 11, no. 9 (2021): 1059–66, https://doi.org/10.17507/tpls.1109.11.

effective in improving the vocabulary mastery of elementary school students. In addition, research by Al-Sofi[20] and Papadopoulos et al.[21] found that board games such as Ludo Arabic and Snakes and Ladders can help madrasah and early childhood students recognise the basic letters and meanings of Arabic more quickly.[22]

Increased Motivation and Affective Engagement

A total of 15 out of 21 studies (71%) reported an increase in students' motivation, participation, and positive attitudes towards language learning through play activities. Game elements such as competitions, awards, and challenges succeed in fostering the intrinsic motivation of students. Tan[23] found that the use of Kahoot! in learning English increases the spirit of learning through a fun, competitive atmosphere. Similar results were demonstrated by Voreopoulou et al.[24] through the Augmented Reality Escape Classroom Game, in which students experienced a high flow experience due to emotional engagement and collaborative problem-solving. In addition, Alshabeb's[25] research also confirms that Ludo Arabic games not only improve learning outcomes but also strengthen the confidence and learning pleasure of Saudi Arabian students.[26]

Strengthening Collaboration and Social Interaction

Some studies (48%) identified increased social interaction and cooperation among participants during play. Activities such as Dixit, Snakes and Ladders Language, and TRIP-a-Bike encourage students to communicate, discuss, and make decisions together. Research by Li, Peterson, and Wang[27] shows that the community of inquiry created during play activities helps students negotiate meaning and strengthen interpersonal communication skills. Similarly, Calvo-

[20] Bakr Bagash Mansour Ahmed Al-Sofi, "The Efficacy of Game-Based Learning Activities in Enhancing L2 Vocabulary Acquisition among Saudi Non-English Majoring Students," *Stellenbosch Papers in Linguistics Plus* 68, no. 1 (2024): 87–116, https://doi.org/10.5842/68-1-992.

[21] Pantelis M. Papadopoulos, Zeinab Ibrahim, and Andreas Karatsolis, "Educational Games for Early Childhood: Using Tabletop Surface Computers for Teaching the Arabic Alphabet," in *Proceedings of the 7th International Conference on Computer Supported Education (CSEDU 2015)*, vol. 1 (Setúbal, Portugal: SciTePress, 2015), 130–38, https://doi.org/10.5220/0005471701300138.

[22] Al-Sofi, "Efficacy of Game-Based Learning Activities."

[23] Debbita Ai Lin Tan et al., "Language Learning in the 21st Century: Malaysian ESL Students' Perceptions of Kahoot!," *International Journal of Virtual and Personal Learning Environments* 9, no. 2 (2019): 55–71, https://doi.org/10.4018/IJVPLE.2019070104.

[24] Voreopoulou, Mystakidis, and Tsinakos, "Augmented Reality Escape Classroom Game."

[25] Alshabeb, "Learning Vocabulary via Video Games."

[26] Alshabeb, "Learning Vocabulary via Video Games."

[27] Ke Li, Mark Peterson, and Qiao Wang, "Using Community of Inquiry to Scaffold Language Learning in Out-of-School Gaming," *International Journal of Game-Based Learning* 11, no. 1 (2021): 31–52, https://doi.org/10.4018/IJGBL.2021010103.

Ferrer and Belda-Medina[28] found that Among Us games facilitate incidental vocabulary learning through social collaboration in the context of multiplayer games.

The results of the analysis of 21 articles showed the diversity of game forms, methods, and dimensions of the impact measured. To clarify the findings regarding the influence of board game-based GBL implementation on vocabulary mastery, motivation, and learning collaboration, a summary of the results of representative research is presented in Table 2 below.

Table 3**.** Representative studies on the effects of board-game-based GBL on vocabulary mastery, learning motivation, and social collaboration.

Author/Year	Game / Platform	Findings	Learning Domain
Liu et al. (2022)	Competitive Mode Game	Improves vocabulary scores and intrinsic motivation	Cognitive & Affective
Hasram et al. (2021)	Wordwall	Vocabulary test results increased significantly	Cognitive
Sianturi & Hung (2023)	Digital vs Paper Board Game	Paper version increases focus; both are effective	Cognitive & Affective
Al-Sofi (2024)	Ludo Arabic	Improves vocabulary mastery and learning interest	Cognitive & Affective
Alshabeb (2024)	Hybrid Video/Board Game	Improves learning outcomes and positive attitudes	Cognitive & Affective
Tan (2019)	Kahoot!	Enhances engagement and learning enjoyment	Affective
Calvo-Ferrer & Belda-Medina (2021)	Among Us (Multiplayer)	Incidental vocabulary learning through social interaction	Social & Cognitive
Li, Peterson, & Wang (2021)	Community of Inquiry Game	Improves collaboration and communication	Social
Voreopoulou et al. (2024)	AR Escape Classroom Game	Enhances motivation and deep learning experience	Affective & Social
Khowaja et al. (2018)	Serious Game (ASD)	Improves vocabulary retention in autistic children	Cognitive & Affective

Source: Authors' synthesis of the reviewed studies.

Based on Table 3, it is evident that the cognitive dimension is the most dominant focus in the implementation of board-game-based GBL, followed by the affective and social dimensions. To clarify the proportional distribution of findings across each impact dimension, the synthesised results are visualised in Figure 5 below.

[28] José Ramón Calvo-Ferrer and Jose Belda-Medina, "The Effect of Multiplayer Video Games on Incidental and Intentional L2 Vocabulary Learning: The Case of *Among Us*," *Multimodal Technologies and Interaction* 5, no. 12 (2021): 80, https://doi.org/10.3390/mti5120080.

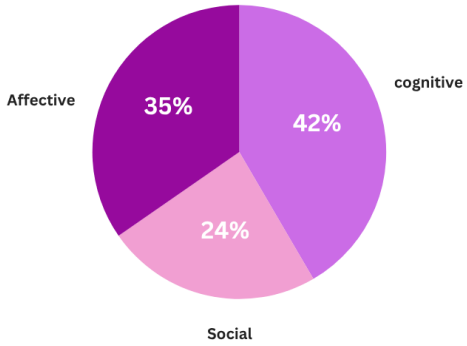


Figure 6**.** Proportional distribution of impact dimensions (cognitive, affective, and social) across the 21 studies implementing board-game-based GBL

Source: Authors' synthesis of the reviewed studies.

Figure 6 shows that most of the research focused on improving cognitive learning outcomes (vocabulary mastery), but the motivational and social aspects also showed significant contributions. This confirms that GBL based on board games can integrate the three dimensions of cognitive, affective, and social language learning in a balanced manner. Thus, board game-based GBL can be considered an effective and holistic learning strategy, which not only strengthens the academic aspect but also builds social skills and positive attitudes towards language learning.

Challenges and Opportunities for the Development of Board-Game-Based Game-Based Learning (GBL)

Analysis of the 21 reviewed articles indicates that the implementation of board-game-based Game-Based Learning (GBL) has proven to be effective, yet it continues to face several practical challenges while simultaneously opening opportunities for innovation in language learning media. The findings can be grouped into two major thematic categories: (1) implementation constraints and barriers, and (2) opportunities for future development and innovation of GBL.

Implementation Constraints and Barriers

A total of 12 out of 21 studies (approximately 57%) reported various challenges in applying board-game-based GBL in formal educational settings. These barriers can be categorised into three main aspects:

Limited time and curriculum constraints. Teachers and lecturers often struggle to integrate game sessions into limited instructional time. Tevetoğlu and Korkmaz[29] note that educational games are frequently perceived as an "additional activity" rather than a core part of the curriculum. Moreover, administrative workload and pressure to complete curriculum content make teachers hesitant to allocate time for gameplay activities.

Teacher readiness and competence. Some educators still lack the skills needed to design or adapt board games to meet specific language learning objectives. Aisyah and Rahman[30] and Hafniati et al.[31] highlight that many teachers require training in game design, rule structuring, and game-based learning assessment to implement GBL effectively.

Availability of resources and technological support. In certain contexts, particularly in primary schools or madrasahs in developing countries, access to digital media, interactive devices, and visual resources remains limited. This issue is highlighted in studies by Papadopoulos et al.[32] and Al-Sofi,[33] which emphasise the need for low-cost, contextualised, and culturally relevant learning media adaptations.

Opportunities for Development and Innovation

Despite these challenges, 16 studies (76%) indicate that board-game-based GBL holds significant potential for sustainable and innovative development. The synthesis identifies three primary directions for future enhancement:

Digital–hybrid integration. Many studies, including Ciccarelli et al.[34] and Voreopoulou et al.,[35] emphasise the need to combine traditional board game elements with digital technologies. Hybrid models such as Genially Ludo, Tabletopia, or Wordwall allow gameplay to be carried out flexibly both in face-to-face and online settings while preserving the social character of board games.[36]

Cross-cultural and multilingual adaptation. Several studies, such as Frolli et al.[37] and Alshabeb,[38] recommend adapting board games to different cultural and linguistic contexts to

[29] Kevser Tevetoğlu and Özgen Korkmaz, "The Effects of Digital Educational Games on Secondary School Students' Attitudes towards Elective English Class and on Increasing Their English Listening Skills and Vocabulary," *Participatory Educational Research* 11, no. 3 (2024): 79–97, https://doi.org/10.17275/per.24.35.11.3.

[30] Aisyah and Rahman, "Application of Educational Game Media."

[31] Hafniati et al., [isi: judul, nama jurnal, volume, nomor, halaman] (2021).

[32] Papadopoulos, Ibrahim, and Karatsolis, "Educational Games for Early Childhood."

[33] Al-Sofi, "Efficacy of Game-Based Learning Activities."

[34] Ciccarelli et al., "TRIP a-Bike."

[35] Voreopoulou, Mystakidis, and Tsinakos, "Augmented Reality Escape Classroom Game."

[36] Ciccarelli et al., "TRIP a-Bike."

[37] Alessandro Frolli et al., "Learning Italian as a Second Language in a Sample of Ukrainian Children: A Game-Based Learning Approach," *Pediatric Reports* 15, no. 3 (2023): 502–11, https://doi.org/10.3390/pediatric15030046.

[38] Alshabeb, "Learning Vocabulary via Video Games."

enhance inclusivity. The development of culturally tailored games like *Ludo Arabic* demonstrates how GBL can serve as multicultural learning media that strengthen identity, diversity awareness, and intercultural tolerance.[39]

Integration of mastery learning principles and adaptive assessment. Some studies, including Karimi and Nasouri,[40] propose embedding Mastery Learning principles into board games to ensure students not only play but also achieve full mastery of the targeted vocabulary. Implementing adaptive, game-based assessment can support teachers in monitoring individual vocabulary progress and providing real-time feedback.

Table 4. Challenges and development opportunities in the implementation of educational board games.

Category	Subaspect	Relevant Researchers	Description of Findings
Implementation Challenges	Time & Curriculum	Tevetoğlu & Korkmaz (2024); Yang et al. (2020)	Difficulty integrating game sessions into tightly scheduled instructional time.
	Teacher Competence	Aisyah & Rahman (2023); Hafniati et al. (2021)	Teachers require training in educational game design and game-based assessment.
	Resources & Technology	Papadopoulos et al. (2015); Al-Sofi (2024)	Limited access to digital facilities and interactive media in primary schools and madrasahs.
Development Opportunities	Digital–Hybrid Integration	Ciccarelli et al. (2024); Voreopoulou et al. (2024)	Combining physical and digital games enhances learning flexibility.
	Cross-Cultural Collaboration	Frolli et al. (2023); Alshabeb (2024)	Adapting games to local contexts strengthens cultural values and diversity.
	Mastery Learning & Adaptive Assessment	Karimi & Nasouri (2024); Liu et al. (2022)	Integrating adaptive game-based assessment improves accuracy in monitoring learning outcomes.

Source: Authors' synthesis of the reviewed studies.

The results of the synthesis show that the main challenge in the implementation of educational board games lies in human factors (teacher readiness) and education system support (time-curriculum alignment). However, development opportunities arise from the integration of digital technology, contextual cultural approaches, and the use of mastery assessments. Overall, these studies suggest that the future direction of GBL development needs to be focused on adaptive, collaborative, and local culture-based learning models to be more effective and sustainable. It also confirms that GBL is not just a game medium, but can be a reflective pedagogical tool to build motivation, creativity, and social value in language learning.

[39] Frolli et al., "Learning Italian as a Second Language."

[40] Mohammad Nabi Karimi and Ali Nasouri, "EFL Learners' Flow Experience and Incidental Vocabulary Learning during Text-Based Game Tasks: The Moderating Role of Working Memory Capacity," *System* 124 (2024): 103398, https://doi.org/10.1016/j.system.2024.103398.

Discussion

This systematic review examined 21 studies on the implementation of educational board games in Arabic vocabulary mastery. The synthesis of the findings reveals the trajectory, mechanisms, and emerging issues surrounding board-game-based learning and its role in supporting vocabulary acquisition. The discussion follows the order of the presented results, focusing on the characteristics of implementation, the impact on vocabulary mastery and learner motivation, and the challenges and opportunities for future development.

The characteristics of implementation across the included studies show that educational board games used in Arabic vocabulary learning generally employ adapted classical formats such as Ludo Arabic and Snakes and Ladders Language.[41] Various matching-card games, Scrabble-type boards, and Wordwall-based hybrid games[42] frequently integrate visual cues, repetition cycles, and movement-based tasks designed to reinforce recognition and recall of Arabic words. Such features resonate with constructivist learning principles that emphasise hands-on exploration and social interaction.[43] Because Arabic has unique orthographic and morphological structures, several studies deliberately incorporate root patterns, semantic categories, and letter-sound correspondences into the game design.[44] Most implementations appear at the elementary and lower-secondary levels,[45] reflecting the suitability of tangible and playful activities for young learners. Although fewer in number, studies involving older learners[46] demonstrate that narrative-based or problem-solving board games can also be effective when adapted to the cognitive profile of adult learners. From a methodological perspective, quasi-experimental designs dominate the field,[47] highlighting a focus on short-term outcome measurement rather than long-term evaluation.[48]

Across the reviewed studies, board-game-based learning consistently shows positive effects on Arabic vocabulary mastery. Cognitive gains primarily relate to improved recognition, retention, and retrieval of vocabulary, supported by mechanisms such as spaced repetition and

[41] Al-Sofi, "Efficacy of Game-Based Learning Activities."
[42] Hasram et al., "Effects of WordWall Online Games"; Frolli et al., "Learning Italian as a Second Language."
[43] Mattheoudakis and Panteliou, "Using Board Games to Practice Grammar."
[44] Papadopoulos, Ibrahim, and Karatsolis, "Educational Games for Early Childhood"; Al-Sofi, "Efficacy of Game-Based Learning Activities."
[45] Hasram et al., "Effects of WordWall Online Games"; Frolli et al., "Learning Italian as a Second Language."
[46] Mattheoudakis and Panteliou, "Using Board Games to Practice Grammar"; Voreopoulou, Mystakidis, and Tsinakos, "Augmented Reality Escape Classroom Game."
[47] Liu et al., "Impact Study of the Learning Effects"; Hasram et al., "Effects of WordWall Online Games."
[48] Liu et al., "Impact Study of the Learning Effects."

contextualised practice embedded in gameplay.[49] Turn-taking, scoring, and reinforcement cycles found in board games align with theories of memory retention and repetition. Motivational gains also emerge strongly, with many studies reporting increased enjoyment, confidence, and willingness to participate.[50] These findings are consistent with Self-Determination Theory, where game mechanics naturally promote autonomy, competence, and relatedness. In several studies, the social dimension of board games also contributes meaningfully to vocabulary learning. Collaborative gameplay encourages negotiation of meaning, spontaneous dialogue, and peer explanation, supporting Vygotsky's notion that language learning is socially mediated.[51] Such interactions provide opportunities for incidental vocabulary acquisition that are often limited in teacher-centred instruction. Together, the reviewed evidence suggests that the cognitive, affective, and social benefits of board-game-based learning form an interconnected system facilitating more effective mastery of Arabic vocabulary.

Despite the demonstrated benefits, several challenges remain in the implementation of educational board games for Arabic vocabulary learning. Time limitations within formal curricula frequently make it difficult for teachers to allocate meaningful play-based sessions, particularly when learning activities are perceived as supplementary.[52] Teacher readiness also emerges as a repeated barrier, with many educators lacking training in game design, adaptation, and assessment. Limited access to materials, printing resources, and digital tools further constrains implementation, especially in schools with minimal technological infrastructure.[53] However, these challenges also present opportunities for future development. Digital–hybrid game models such as Wordwall, AR Escape Room, and Genially-based boards offer flexibility, adaptive feedback, and efficient classroom integration while preserving the social dynamics of physical board games.[54] Culturally contextualised games incorporating Islamic values or local narratives enhance relevance and learner engagement.[55] The integration of mastery-learning cycles and adaptive

[49] Liu et al., "Impact Study of the Learning Effects"; Frolli et al., "Learning Italian as a Second Language."

[50] Tan et al., "Language Learning in the 21st Century"; Alshabeb, "Learning Vocabulary via Video Games."

[51] Li, Peterson, and Wang, "Using Community of Inquiry"; Calvo-Ferrer and Belda-Medina, "Effect of Multiplayer Video Games."

[52] Tevetoğlu and Korkmaz, "Effects of Digital Educational Games."

[53] Papadopoulos, Ibrahim, and Karatsolis, "Educational Games for Early Childhood"; Al-Sofi, "Efficacy of Game-Based Learning Activities."

[54] Ciccarelli et al., "TRIP a-Bike"; Voreopoulou, Mystakidis, and Tsinakos, "Augmented Reality Escape Classroom Game."

[55] Alshabeb, "Learning Vocabulary via Video Games"; Frolli et al., "Learning Italian as a Second Language."

assessment principles into board-game mechanics[56] also offers promising avenues for personalised vocabulary progression.[57]

Overall, this review demonstrates that educational board games constitute an effective and engaging pedagogical strategy for Arabic vocabulary mastery. Their strength lies in combining cognitive reinforcement, motivational appeal, and social interaction within a structured and enjoyable learning environment. Although institutional and practical challenges persist, the emergence of hybrid designs, cultural adaptations, and data-supported game-based frameworks signals significant potential for sustainable development. Board-game-based learning thus represents a promising direction for developing learner-centred, interactive, and culturally responsive approaches to Arabic vocabulary instruction.

CONCLUSION

This systematic review provides a comprehensive synthesis of 21 studies investigating the implementation of educational board games in Arabic vocabulary mastery. The findings demonstrate that board-game-based learning constitutes an effective pedagogical approach that integrates cognitive, motivational, and social mechanisms to support vocabulary acquisition. Educational board games designed for Arabic commonly incorporate visual cues, repetition cycles, semantic grouping, and root-pattern structures that align with the linguistic characteristics of the language. Such design features enable games to function not merely as recreational tools but as structured learning environments grounded in constructivist principles.

Across the reviewed studies, consistent improvements in vocabulary recognition, retention, and retrieval indicate that board games enhance learning through mechanisms such as retrieval practice, immediate feedback, and contextualised repetition. In addition to cognitive gains, board games foster high levels of learner motivation and engagement by promoting autonomy, competence, and social relatedness dimensions central to Self-Determination Theory. The collaborative nature of gameplay further supports incidental language learning and dialogue, reinforcing the role of social interaction in vocabulary development.

Despite these strengths, challenges remain in the wider adoption of board-game-based learning, including limited classroom time, insufficient teacher preparedness, and restricted access to materials or digital resources. However, these challenges simultaneously present opportunities for innovation through hybrid physical–digital game formats, culturally contextualised game designs, and the integration of mastery-learning and adaptive assessment principles. Such

[56] Karimi and Nasouri, "EFL Learners' Flow Experience"; Liu et al., "Impact Study of the Learning Effects."

[57] Alshabeb, "Learning Vocabulary via Video Games."

approaches can expand accessibility while maintaining the pedagogical richness of board-game-based learning.

Overall, this review concludes that educational board games represent a promising, learner-centred, and culturally adaptable strategy for improving Arabic vocabulary mastery. To maximise their impact, future research should adopt longitudinal designs, explore cross-cultural adaptations, and examine the integration of digital enhancements that support personalised and scalable learning. Continued development of teacher training and institutional support structures will also be essential to ensure the sustainable implementation of board-game-based learning in Arabic language education.

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