

DEVELOPING AN INTERACTIVE ARABIC LEARNING MODULE THROUGH BIMA LANGUAGE LOANWORDS

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Abstract

The widespread use of Arabic loanwords in the Bima language has not been systematically integrated into Arabic instruction, creating a gap in contextual learning materials. This study develops an interactive module based on Arabic-Bima loanwords, grounded in the Contextual Teaching and Learning (CTL) approach and supported by Culturally Responsive Teaching (CRT). Using the Borg and Gall R&D model, five stages were completed: needs analysis, product design, expert validation, field testing, and revision, using a mixed-methods approach combining quantitative tests and qualitative feedback. Expert evaluations rated the module highly feasible (90–95%). Field trials at MAN 2 Kota Bima and MAN 2 Bima showed statistically significant improvement based on the Wilcoxon test ($p = 0.000$) and greater gains based on the Mann-Whitney test ($p < 0.05$). Teacher ratings (94–98%) and student feedback confirmed strong acceptance. The findings confirm the innovative potential of Arabic-Bima loanwords as an effective contextual and culturally responsive resource in Arabic language learning.

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Keywords:

Module; Interactive Learning; Loanwords; Arabic Language; Bima Language.

ملخص

إن الاستخدام الواسع للألفاظ العربية الدخلية في لغة بيماء لم يدفع بشكل منهجي في تعليم اللغة العربية، مما يخلق فجوة في توفر المواد التعليمية السياقية. تهدف هذه الدراسة إلى تطوير وحدة تعليمية تفاعلية تعتمد على الألفاظ العربية-البيماوية، مستندةً إلى مدخل التعليم السياقي ومدعومة بالتعليم المستجيب ثقافياً. وقد استخدمت الدراسة نموذج البحث والتطوير ليورغ وغال، وأنجزت خمس مراحل: تحليل الاحتياجات، تصميم المنتج، التحقق من الخبراء، التجربة الميدانية، والمراجعة، وذلك من خلال منهج مختلط يجمع بين الاختبارات الكمية والتغذية الراجعة النوعية. قيم الخبراء الوحدة بدرجة عالية من الصلاحية (٩٥-٩٠٪). وأظهرت التجارب الميدانية في المدرسة العالية الحكومية الثانية لمدينة بيماء والمدرسة العالية الحكومية الثانية بينما تحسناً ملحوظاً من خلال اختبار ويلكوكسون ($F = 0.000$) وزيادة أكبر وفق اختبار مان-ويني ($F > 0.05$). كما أكدت تقييمات المعلمين (٩٤-٩٨٪) وتغذية الطالب الراجعة قبولاً قوياً. وتوّكّد النتائج الاستخدام الجديد للألفاظ العربية-البيماوية بوصفها مورداً سياقياً فعالاً.

كلمات أساسية: وحدة تعليمية؛ التعلم التفاعلي؛ مفردات مستعارة؛ اللغة العربية؛ لغة بيماء.

Introduction

Arabic was first introduced to the Nusantara region along with the arrival of Islam, brought by Muslim traders from Arabia and Persia around the 7th century AD.¹ The spread of Islam itself began to show significant development in the archipelago around the 11th to 17th centuries AD.² Numerous studies on linguistic contact confirm that Arabic has profoundly shaped many languages of the Nusantara through centuries of religious, educational, and cultural interaction. For example, research on lexical borrowing in Malay/Indonesian shows that prolonged contact with Arabic, primarily via Islamic practices, was a major driver of vocabulary adoption.³ In particular, the study “Islamic cultural and Arabic linguistic influence on the languages of Nusantara” argues that Arabic, as the language of religion, education, and literary traditions, “synergized with the indigenous languages of Nusantara” and contributed a significant body of religious, scientific, and cultural terms.⁴

In terms of how these borrowings were adapted, phonological changes are well documented. For instance, phonetic modifications such as neutralization, anaptyxis (insertion of vowels), or shortening of vowels often occur when Arabic loanwords enter Indonesian contexts.⁵ Consequently, Arabic has become one of the languages that had a substantial influence on many local languages in Indonesia, including the Bima/Mbojo language.⁶ Essentially, the borrowing of Arabic vocabulary into Bima has been ongoing for centuries in parallel with the spread of Islam in the region. However, this linguistic potential has not been systematically explored, and only a few studies have addressed it in depth. The reason is that the Bima community has unconsciously used many Arabic-derived expressions or vocabulary in daily life. For example, the word kahawa (coffee) in Bima is derived from the Arabic word qahwah (قهوة). In this regard, the researcher considers it important to develop an interactive learning module that utilizes borrowed

¹ Syifa Shofura et al., “The Arrival of Islam in Indonesia: A Theory of Islam’s Spread,” *JUSPI (Jurnal Sejarah Peradaban Islam)* 8, no. 1 (2024): 127, <https://doi.org/10.30829/juspi.v8i1.19700>.

² Syaifan Nur and Dudung Abdurahman, “Sufism of Archipelago: History, Thought, and Movement,” *ESENSIA: Jurnal Ilmu-Ilmu Ushuluddin* 18, no. 2 (2017): 123–33, <https://doi.org/10.14421/esensia.v18i2.1476>.

³ Rozanna Mulyani and Noordin Mohd Noor, “Languages in Contact: A Study of Arabic Loanwords in Malay/Indonesian Language,” *International Journal of Culture and Art Studies* 1, no. 1 (2018): 36–40, <https://doi.org/10.32734/ijcas.v1i1.453>.

⁴ Choirul Mahfud et al., “Islamic Cultural and Arabic Linguistic Influence on the Languages of Nusantara; From Lexical Borrowing to Localized Islamic Lifestyles,” *Wacana* 22, no. 1 (2021): 224, <https://doi.org/10.17510/wacana.v22i1.914>.

⁵ Abdul Hamid et al., “Absorption of Arabic Vocabulary into Indonesian (Analysis of Phonology, Morphology and Meaning in the Kbki V Dictionary),” *Journal of World Science* 3, no. 1 (2024): 116–25, <https://doi.org/10.58344/jws.v3i1.549>.

⁶ A-esah Wemamah and Fahnida Aulia, “Analysis of Changes in the Sound of Arabic Loan Words in the Translation of Akidatul Awam by Syekh Ahmad Marzuki (Crowley’s Theory Perspective),” *Jurnal Al-Maqayis* 10, no. 1 (2023): 1–21, <https://doi.org/10.18592/jams.v10i1.6794>.

vocabulary from Arabic and Bima, so that it can serve as one of the students' learning guides.

This study aligns strongly with contemporary international research on vocabulary challenges and language-learning affect in Arabic as a foreign language. Almelhes, through a systematic review, highlights that many non-native learners struggle with limited vocabulary mastery, low self-confidence, and low motivation, and shows that gamification can significantly enhance learner engagement and achievement in Arabic vocabulary and grammar learning.⁷ Rajab et al. in a bibliometric analysis of over one thousand publications, document a clear upward trend in the use of interactive, AI-driven, and game-based digital tools for Arabic vocabulary acquisition.⁸ Meta-analytic findings also support the pedagogical value of multimedia glosses, showing medium-to-large effect sizes on vocabulary learning for second-language learners, particularly among at the beginner level.⁹ In addition, Jaffar et al. developed a pilot gamified model for Arabic vocabulary instruction, with teachers reporting highly favorable reactions to its design and practical usability.¹⁰ Together, these studies illustrate that both affective constraints (such as confidence and motivation) and cognitive constraints (such as lexical access) remain central challenges in Arabic language education, and that technology-enhanced, and interactive pedagogies offer effective solutions.

The present study shares several key similarities with these works, particularly in acknowledging the central challenges of vocabulary mastery, low affective readiness, and the need for engaging, technology-supported learning environments. Like the previous studies, it also integrates digital interactivity and aims to enhance learners' motivation and vocabulary retention.

However, much of the existing research continues to rely on decontextualized vocabulary typically standard Modern Standard Arabic without embedding language instruction in the learner's sociocultural environment. In contrast, the present study introduces a culturally embedded innovation by integrating Arabic loanwords from the Bima language into an interactive, gamified learning module. Many Arabic-derived words are already embedded in daily conversations among Bima speakers, yet they are rarely part of formal Arabic education. By

⁷ Sultan A. Almelhes, "Gamification for Teaching the Arabic Language to Non-Native Speakers: A Systematic Literature Review," *Frontiers in Education* 9 (March 2024): 1371955, <https://doi.org/10.3389/feduc.2024.1371955>.

⁸ Siti Sharah Rajab et al., "Digital Tools for Enhancing Arabic Vocabulary Acquisition: A Bibliometric Analysis," *Journal of Information System and Technology Management* 9, no. 37 (2024): 256–70, <https://doi.org/10.35631/JISTM.937019>.

⁹ Hassan Saleh Mahdi et al., "Multimedia Glosses and Second Language Vocabulary Learning: A Second-Round Meta-Analysis," *Acta Psychologica* 248 (August 2024): 104341, <https://doi.org/10.1016/j.actpsy.2024.104341>.

¹⁰ Mohammad Najib Jaffar et al., "Development of Arabic Vocabulary Gamification Model: A Pilot Study," *Journal of Advanced Research in Computing and Applications* 34, no. 1 (2024): 1–18, <https://doi.org/10.37934/arca.34.1.118>.

incorporating these familiar lexical items into a digital module, this study promotes stronger vocabulary mastery and deepens learners' linguistic identity and cultural connection. This culturally situated approach aligns with modern pedagogical frameworks that emphasize localized, learner-centered instruction and the integration of students' lived linguistic realities.

The novelty of this study lies firstly in its position as the first systematic effort to organize and teach Arabic loanwords within the Bima linguistic context, and second, in its contribution of an instructional product designed for direct classroom implementation, rather than merely proposing a theoretical or technological model. Through this contribution, the study bridges the gap between learners' home dialect (L1) vocabulary and their formal L2 Arabic learning, bringing both practical and theoretical contributions to the field of Arabic language education.

Nasrah et al. explain that Contextual Teaching and Learning (CTL) emphasizes the connection of instructional materials with students' real-life contexts and cultural backgrounds, thereby enhancing learning outcomes.¹¹ Similarly, Khoo and Huo affirm that Culturally Responsive Teaching (CRT) can increase student engagement, cultural identity, and academic achievement through the integration of local culture into the learning process.¹² Furthermore, studies on loanword phonology by Katsuda demonstrate that borrowed words typically undergo systematic phonological and semantic adjustments to fit the structural patterns of the receiving language.¹³

Based on these findings, this study reinforces the notion that integrating Arabic loanwords from the Bima language into an interactive module not only enriches students' vocabulary mastery but also enhances their learning motivation and cultural awareness.

Method

This study employed a Research and Development (R&D) method. According to Borg and Gall, the research and development model is a form of "research-based development" that has been established both as a strategy and as a means to

¹¹ Nasrah et al., "Designing a Learning Model with a Contextual Teaching Learning Approach Based on the Flipped Classroom to Improve Science Understanding," *Asian Journal of Education and Social Studies* 50, no. 3 (2024): 60–70, <https://doi.org/10.9734/ajess/2024/v50i31280>.

¹² Elaine Khoo and Xiangying Huo, "The Efficacy of Culturally Responsive Pedagogy for Low-Proficiency International Students in Online Teaching and Learning: A Canadian Experience with an Online Reading-Writing Program," *Journal of Teaching and Learning* 16, no. 2 (2022): 67–85, <https://doi.org/10.22329/jtl.v16i2.7022>.

¹³ Hironori Katsuda, "A Probabilistic Model of Loanword Accentuation in Japanese," *Phonology* 42 (2025): e9, <https://doi.org/10.1017/S0952675725100080>.

improve the quality of education.¹⁴ The Borg and Gall model has ten steps which are explained as follows: (1) research and data collection, (2) planning, (3) draft product development, (4) preliminary field testing, (5) revision of preliminary test results, (6) main field testing, (7) product refinement based on field test results, (8) operational field testing, (9) final product refinement, and (10) dissemination and implementation.¹⁵

The adoption of a Research and Development (R&D) framework in this study is supported by recent peer-reviewed findings. Putriani et al. report that the Borg & Gall model “emphasizes iterative testing and expert validation, ensuring that the resulting product is both theoretically sound and practically applicable in classroom settings.” This reinforces the selection of this model in the present research, as it provides a systematic and structured process for developing, evaluating, and refining educational products to meet real instructional needs.¹⁶

In addition, recent literature highlights that the Borg & Gall model is not only iterative but also flexible and adaptable to specific educational contexts. For example, a study by Putri et al. developed an e-module using the Borg & Gall framework combined with a contextual approach, conducting expert validation, initial field testing, and revision to ensure both theoretical coherence and practical usability.¹⁷

In line with this flexibility, the problem-solving strategy began with the identification of borrowed Arabic vocabulary in the Bima language through literature review and interviews with native speakers, followed by an analysis of its contextual use in daily life. The results of this analysis then served as the foundation for developing an interactive learning module that integrates local elements (Bima language) with Arabic language learning content. This approach reflects the adaptive nature of R&D emphasized in prior studies, where local sociolinguistic context is positioned as a core component in the development of effective and culturally responsive learning materials.

¹⁴ Umar Umar et al., “Research and Development: As the Primary Alternative to Educational Research Design Frameworks,” *JELL (Journal of English Language and Literature) STIBA-IEC Jakarta* 8, no. 01 (2023): 73–82, <https://doi.org/10.37110/jell.v8i01.172>.

¹⁵ Mohammad Syahidul Haq et al., “Staffing Database Application Development Based on YII Framework,” *International Journal on Advanced Science, Engineering and Information Technology* 13, no. 3 (2023): 1087–93, <https://doi.org/10.18517/ijaseit.13.3.16013>.

¹⁶ Deka Putriani et al., “Development of Assessment to Measure Creative Thinking Skills of Junior High School Students on the Topic of Chemicals in Daily Life,” *ISEJ : Indonesian Science Education Journal* 4, no. 1 (2023), <https://siducat.org/index.php/isej/article/view/365>.

¹⁷ Septya Novena Putri et al., “E-Module with the Borg and Gall Model with a Contextual Approach to Thematic Learning,” *Journal for Lesson and Learning Studies* 6, no. 1 (2023): 27–34, <https://doi.org/10.23887/jlls.v6i1.57482>.

The module was designed using the Contextual Teaching and Learning (CTL) approach, which is relevant to the students' cultural and linguistic background.¹⁸ Neuroscience suggests that learning becomes more effective when students are able to relate academic material to the situations they encounter in their everyday lives.¹⁹ In line with this, research shows that CTL can significantly boost students' motivation and confidence by linking learning tasks to their real-life experiences.²⁰ The effectiveness of the module was tested through limited trials in several MAN schools in Bima City and Regency. Evaluation and revision were carried out based on observations, interviews, and questionnaires with both teachers and students, in order to ensure the module's acceptability and usefulness.

The study entitled "Interactive Learning Module of Arabic Loanwords in Bima Language" was conducted in two Madrasah Aliyah Negeri, namely MAN 2 Kota Bima and MAN 2 Bima, with Grade XI science classes as the research sample. At MAN 2 Kota Bima, class XI IPA 8 served as the experimental class and XI IPA 7 as the control class, while at MAN 2 Bima, class XI IPA D was the experimental class and XI IPA E the control class. The selection of these two madrasahs was based on several considerations: (1) both have sufficient Arabic language learning hours, (2) there are language classes relevant to the research needs, and (3) the students' learning motivation and the availability of facilities that support the learning process. For these reasons, this research could be carried out more effectively.

The research was conducted over a period of two months. The first stage began with a needs analysis, carried out through literature review, observation, and interviews to identify the urgency and condition of Arabic language learning in the two madrasahs. Based on the results of this needs analysis, a draft interactive learning module integrating Arabic loanwords from the Bima language was developed as the primary instructional product of the study.

¹⁸ Wildatul Muyasarah et al., "Mastering Arabic Through the Contextual Teaching and Learning Model at Thamavitya Mulniti School Thailand," *International Journal of Arabic Language Teaching* 7, no. 01 (2025): 110–25, <https://doi.org/10.32332/ijalt.v7i01.10092>.

¹⁹ Eka Ernawati et al., "Improving Reading Comprehension by Using Contextual Teaching and Learning (CTL) at Secondary School in Jember," *Linguapedia* 6, no. 1 (2022), <https://ejurnal.uij.ac.id/index.php/LIN/article/view/2900>.

²⁰ Siti Maysuroh et al., "Contextual Teaching and Learning (CTL) Approaches in Teaching English Writing," *Journal of English Language and Education* 10, no. 5 (2025), <https://jele.or.id/index.php/jele/article/view/1420>.



Figure 1. Cover of the Interactive Learning Module

The cover page of the interactive learning module on Arabic loanwords in the Bima language for students of MAN 2 Kota and Kabupaten Bima. This page displays the title, institutional logo, and the identity of the module's author.



Figure 2. Example of Learning Content in the Interactive Module

The content page presents the history of the introduction of Arabic into Bima, including the process of Islamization. The material is accompanied by narrative historical text and visual illustrations of figures.



Figure 3. Display of Interactive Menu and Exercises in the Module

The exercise page in the interactive module presents tasks for Maharah Kitabah (writing) and Maharah Kalam (speaking) based on Bima local culture. Students are instructed to create a short story using Arabic-Bima loanwords based on the images of Rimpung Mpida, Asi Mbojo, and Pacoa Jara.

Before the module was tested, it underwent validation by experts, involving an expert in teaching material design, an expert in Arabic language learning, and an expert in Bima language and culture. The validation results showed that the module was categorized as highly feasible. Feedback from the experts was then used as the basis for revising the module before its classroom implementation stage.

The next stage was the trial implementation of the module. The module was applied in the experimental class (XI IPA-8 MAN 2 Kota Bima and XI MAN 2 Bima) in Arabic learning, while the control class continued to use standard teaching materials. During the learning process, questionnaires were distributed to both students and teachers to determine their responses to the use of the module. The questionnaire data were analyzed using descriptive statistical analysis (mean, median, mode, standard deviation, minimum, and maximum values) to observe the tendencies of students' responses as well as their consistency.

The techniques and instruments for data collection in this study consisted of six components: questionnaire, interview (interview guidelines), observation (observation sheets), test (test items), document analysis, and expert judgment (assessment rubric). The data sources included students, teachers, and experts. Specifically, the data consisted of (1) expert validation results, (2) pretest and posttest scores from both experimental and control classes, (3) teachers' and students' questionnaire responses, (4) interview transcripts, and (5) observation notes during the learning process. This multi-source data collection ensured the triangulation of data, which is an essential strategy in educational research to strengthen validity and reliability.²¹

The data analysis process was conducted in several stages and applied five approaches: descriptive, qualitative, quantitative, reliability testing, and revision. First, the descriptive analysis was carried out to summarize the results of questionnaires and observations, presenting them in the form of means, medians, modes, standard deviations, and percentages to illustrate tendencies and patterns of responses.²² Second, the qualitative analysis was used to interpret the interview transcripts and observation results to provide deeper insight into students' and teachers' experiences during the implementation of the module. Qualitative

²¹ Muncar Winarti et al., "Evaluating the Validity, Reliability and Authenticity of English Achievement Test for the Twelfth Grade Students of SMAN 4 Tebo, Jambi," *English Education Journal* 11, no. 1 (2021): 130–38, <https://doi.org/10.15294/eej.v11i1.44176>.

²² Septi Suarmita et al., "Development of Multimedia-Based Interactive Module Teaching Materials to Increase Learning Independence Learners," *Journal of Education and Learning Research* 2, no. 2 (2025): 141–51, <https://doi.org/10.62208/jelr.2.2.p.141-151>.

interpretation in educational development research is essential, as it enables the exploration of contextual and cultural elements that cannot be fully captured by numbers.²³

Third, the quantitative analysis was conducted on test results, employing non-parametric statistical methods, namely the Wilcoxon Signed-Rank Test to analyze differences between pretest and posttest scores within the same group, and the Mann-Whitney U Test to examine differences between experimental and control groups. These tests were chosen because the data did not meet the assumptions of normality, making non-parametric methods more appropriate. Fourth, a reliability analysis was performed on the questionnaire and expert validation instruments to ensure the consistency and accuracy of the measurement tools. Reliability testing is widely recognized as a critical step in module validation and ensures that the instruments produce stable and dependable measurements consistently across different respondents.²⁴

Finally, the revision stage was carried out based on the integration of quantitative findings, qualitative interpretations, and expert feedback, leading to the refinement of the interactive module before wider implementation. This step reflects the iterative nature of the Borg and Gall development model, where continuous revision is necessary to produce a valid, practical, and effective educational product.²⁵

Result and Discussion

Planning and Development of the Module

During the preliminary need analysis stage, the researcher conducted classroom observations on July 25-27, 2025, focusing on teachers' instructional practices, the instructional materials, and student engagement. The observations revealed that Arabic learning was limited to standard textbook material, with no attempt to integrate Arabic loanwords from the Bima language. Students tended to be passive recipients of instruction, following the teacher's explanation and textbook exercises, but showing little connection between Arabic vocabulary and their own daily linguistic environment. This finding was further supported by documentation evidence, including lesson plans and Arabic textbooks used in both

²³ Kristine Bakkemo Kostøl and Kari Beate Remmen, "A Qualitative Study of Teachers' and Students' Experiences with a Context-Based Curriculum Unit Designed in Collaboration with STEM Professionals and Science Educators," *Disciplinary and Interdisciplinary Science Education Research* 4, no. 1 (2022): 26, <https://doi.org/10.1186/s43031-022-00066-x>.

²⁴ Winarti et al., "Evaluating the Validity, Reliability and Authenticity of English Achievement Test for the Twelfth Grade Students of SMAN 4 Tebo, Jambi."

²⁵ Rifkisyahputra Rifkisyahputra and Anik Ghufron, "Development of E-Learning Modules to Improve Knowledge and Skills of The Taliabu Regional Language of High School Students," *Jurnal Paedagogy* 11, no. 4 (2024): 807, <https://doi.org/10.33394/jp.v11i4.12905>.

schools, which confirmed the absence of local linguistic elements in classroom practice.

In addition, semi-structured interviews were conducted with two Arabic teachers, one from MAN 2 Kota Bima and one from MAN 2 Bima. Both teachers stated that Arabic instruction had always relied on standard textbooks and had never explored the potential of Bima loanwords. Nevertheless, they showed strong enthusiasm for this innovation. As one teacher from MAN 2 Bima City remarked during the interview in July 2025: *"This is the first time my students and I have realized that there are Arabic words in Bima. I believe this will be something new and enjoyable for them."*

Classroom observations further indicated that students demonstrated for alternative learning resources. Although they initially showed limited motivation in conventional classes, several students expressed curiosity when the researcher mentioned examples of Bima words that originated from Arabic. This suggests that linking Arabic with students' cultural and linguistic background has the potential to increase attention, motivation, and classroom participation.

These findings highlight the gap between students' everyday linguistic realities and the Arabic curriculum currently applied. By integrating Arabic loanwords into an interactive learning module, the research directly addresses this gap. This result is consistent with international studies showing that limited vocabulary mastery, low motivation, and low confidence are major barriers for non-native Arabic learners, and that digital tools are increasingly central to strengthening Arabic vocabulary acquisition.²⁶ At the same time, meta-analytic evidence confirms that multimedia glosses generate medium-to-large effects on L2 vocabulary learning, particularly for beginner-level learners.²⁷ Furthermore, recent pilot studies on Arabic vocabulary gamification show highly positive teacher perceptions regarding the effectiveness of gamified instructional models.²⁸ Therefore, the contribution of this study lies not only in producing a feasible and effective learning module but also in offering a culturally grounded approach that links learners' real linguistic environment with formal Arabic instruction, thereby

²⁶ Muhammad Feri Basrianto, "Analyzing Difficulties in Speaking Arabic and Their Solutions Based on the Book Standards of Arabic Language Skills for Non-Native Speakers," *Jurnal Pendidikan Indonesia* 6, no. 5 (2025): 2372–86, <https://doi.org/10.59141/japendi.v6i5.7795>; Muhamad Khairul Anuar Zulkepli and Mohd Zulkhairi Abd Hamid, "Innovative Arabic Vocabulary Learning: The Role of Canva in Modern Education," *International Journal of Research and Innovation in Social Science* VIII, no. IX (2024): 693–705, <https://doi.org/10.47772/IJRISS.2024.809062>.

²⁷ Mohammed Ali Mohsen et al., "Multimedia Glosses and Their Impact on Second Language Vocabulary Acquisition: Insights from a Meta-Analysis and Document Co-Citation Analysis," *Innovation in Language Learning and Teaching* 18, no. 2 (2024): 109–24, <https://doi.org/10.1080/17501229.2023.2236084>.

²⁸ Abdul Ghofur et al., "Students' Perceptions And Motivation towards Teaching Arabic Vocabulary Through Gamification," *Ijaz Arabi Journal of Arabic Learning* 6, no. 3 (2023), <https://doi.org/10.18860/ijazarabi.v6i3.18642>.

improving vocabulary mastery and reinforcing students' linguistic and cultural identity.

The First Expert Consultation

This module has undergone validation by three experts. Each instrument employed was accompanied by its respective scoring. The three experts involved were: a specialist in instructional material design and development (MAH), an expert in Arabic language teaching (N), and an expert in Bima language and culture (DMM). The following presents the assessments provided by the three experts:

Table 1. Results of validation by three experts

| Validator | Assessment Items | Point | Total Score |
|-----------|--|-------|-------------|
| MAH | Content Feasibility Aspect | 22 | 90 |
| | Presentation Aspect | 23 | |
| | Linguistic Aspect | 23 | |
| | Practicality Aspect | 22 | |
| N | Suitability of Learning Objectives | 23 | 87 |
| | Learning Method | 22 | |
| | Arabic Language | 22 | |
| | Evaluation | 20 | |
| DMM | Bima Language | 20 | 85 |
| | Bima Culture | 22 | |
| | Bima Language and Culture | 21 | |
| | Material Completeness and Creativity in Language Use | 22 | |

The scores/values given by the three validators were calculated using the following formula:

$$\text{Percentage} = (\text{Score Obtained} \div \text{Maximum Score}) \times 100\%$$

$$\text{Percentage} = \frac{90+87+85}{3} \times 100\% = 87,66$$

100

Category of Achieved Score:

21–40 = Not feasible

41–60 = Fairly feasible

61–80 = Feasible

81–100 = Highly feasible

Field Trial

In this research and development, the researcher initially planned to conduct expert validation, a small group trial, and then proceed to a field test. However, considering the relatively small number of research participants (fewer than 30 students), namely 29 students from class XI IPA 8 and 18 students from class XI D, the small group trial was not carried out.

Instead, the researcher conducted expert validation to ensure the feasibility of the product before its implementation in the field. After undergoing the

validation and revision process, the product was directly tested in a field trial involving all students as the research subjects.²⁹ In this way, the developed product still went through a systematic testing process, consisting of: 1) expert validation to evaluate the content accuracy, linguistic appropriateness, and instructional design; 2) revision based on the experts' feedback; and 3) field trial involving all students, which simultaneously replaced the role of the small group trial stage.³⁰ This step was considered more effective because the limited number of students did not allow for division into smaller groups beforehand. The research was conducted at MAN 2 Kota Bima and MAN 2 Bima, with an average of six meetings in each school. At MAN 2 Kota Bima, the study involved 29 students in the experimental class and 29 students in the control class. Meanwhile, at MAN 2 Bima, the study involved 18 students each in the experimental and control classes.

Specifically, the first meeting was devoted to administering the pretest, the second through fifth meetings focused on instructional activities using the developed module, and the sixth meeting was allocated for the posttest.

To determine the effectiveness of the interactive learning module in improving students' learning outcomes, the researcher employed the Wilcoxon Signed-Rank Test and the Mann-Whitney U Test with the assistance of SPSS, to ensure that the improvement in test results was statistically significant.³¹

The research hypotheses proposed are as follows:

- 1) H_0 (null hypothesis): There is no significant difference in students' learning outcomes, either in the comparison between pretest and posttest scores or between the experimental and control classes.
- 2) H_1 (alternative hypothesis): There is a significant difference in students' learning outcomes, both in the comparison between pretest and posttest scores and between the experimental and control classes.

The Wilcoxon Signed-Rank Test was used to determine the difference in learning outcomes between pretest and posttest scores within the same group. This test was chosen because the data were not normally distributed and therefore did not meet the assumptions required for the paired t-test. The testing criterion was determined based on the significance value (p), namely, if $p < 0.05$, then there is a significant difference between the pretest and posttest results.³²

²⁹ Y Yennita et al., "Validation and Testing of STEM Project-Based Virtual Learning Modules to Improve Higher-Level Thinking Skills," *JIPF (Jurnal Ilmu Pendidikan Fisika)* 7, no. 2 (2022): 145, <https://doi.org/10.26737/jipf.v7i2.2420>.

³⁰ Umar et al., "Research and Development."

³¹ Nurwiani and Lia Budi Tristanti, "Independent Samples T Test and The Mann-Whitney-Wilcoxon Test to Know the Effect of the Drill Method on Mathematics Learning Outcomes," *Journal of Modern Applied Statistical Methods* 24, no. 1 (2024), <https://doi.org/10.56801/jmasm.V24.i1.1>.

³² Nur Indah Sari Indah and Fandi Ahmad, "Exploring the Wilcoxon Test in Science Education: A Literature Review of Empirical Research," *Indonesian Journal of Educational Science (IJES)* 7, no. 2 (2025), <https://ojs.unsulbar.ac.id/index.php/ijes/article/view/4712>.

The Mann-Whitney U Test was used to compare the learning outcomes between the experimental and control classes. In this study, the comparison was conducted using the N-Gain value as an indicator of learning improvement. This test was chosen because the data were not normally distributed and therefore did not meet the assumptions required for the independent t-test. The same significant criterion was applied, with $p < 0.05$, indicating a statistically significant difference between the two groups.³³

Revision and Data Analysis

In this second stage, the researcher conducted data analysis and revised the module based on the results of the trials on the first and second topics. After completing two learning themes—(1) the History and Definition of Loanwords and (2) the Forms of Arabic Vocabulary Borrowing in the Bima Language—the researcher distributed questionnaires to teachers and students to collect systematic feedback on the use, clarity, and relevance of the module. In addition, for the purpose of revision, the researcher once again consulted the module with experts to gain more in-depth input. Feedback from experts was considered highly essential to ensure that the developed module met quality standards and aligned with classroom learning needs.³⁴

Subsequently, the questionnaire results were analyzed using descriptive statistical analysis, which included the calculation of the mean, median, mode, standard deviation, as well as minimum and maximum values. This analysis was employed to determine the distribution of teachers' and students' evaluations and to examine the consistency of their responses. Accordingly, the results of this assessment not only describe the overall feasibility of the module but also provide a strong quantitative basis for evaluating its effectiveness and quality before being more widely implemented in subsequent learning activities.³⁵

The Second Expert Consultation

Based on the field trials that had been conducted for the previous two themes, the researcher consulted once again with an Arabic language learning expert to obtain further corrections. The final score obtained was as follows:

³³ Ratih Nur Sholihah et al., "Implementation of Personal Digital Inquiry Assisted by Infographics to Increase Science Literacy in Ecosystem Materials," *Jurnal Penelitian Pendidikan IPA* 9, no. 8 (2023): 5927–34, <https://doi.org/10.29303/jppipa.v9i8.3917>.

³⁴ Norhayati Mustafa Khalid et al., "Development and Evaluation of Content Validity and Acceptance of a Multidomain Intervention Module for Reversal of Cognitive Frailty Among Older Adults," *Clinical Interventions in Aging* Volume 19 (July 2024): 1189–202, <https://doi.org/10.2147/CIA.S458600>.

³⁵ Rike Aristina and Wiwi Isnaeni, "Development of PBL-Based Module to Facilitate Students' Science Literacy and Independence Skills," *Unnes Science Education Journal* 11, no. 1 (2022): 1–8, <https://doi.org/10.15294/usej.v11i1.47365>.

Table 2. Results of Expert Validation

| Validator | Total Score | Skor Maksimal | Percentage | Average (Mean) | Category |
|-----------|-------------|---------------|------------|----------------|-----------------|
| MAH | 95 | 100 | 95,00% | 4,75 | Highly Feasible |
| N | 92 | 100 | 92,00% | 4,60 | Highly Feasible |
| DMM | 90 | 100 | 90,00% | 4,50 | Highly Feasible |

Based on the validation conducted by three experts, the interactive module on Arabic loanwords in the Bima language received very positive evaluations. The instructional design expert awarded a score of 95 out of a maximum score of 100, equivalent to 95%, with an average of 4.75. This evaluation indicates that the module demonstrates excellent quality in terms of instructional design, visual organization, and completeness of material presentation.

Furthermore, the Arabic language learning expert gave a score of 92, corresponding to 92%, with an average of 4.60. This result confirms that, in terms of content, material relevance, and alignment with the Arabic learning process, the module is considered highly feasible and appropriate for students' needs.

Meanwhile, the Bima language and culture expert provided a score of 90, with a percentage of 90% and an average of 4.50. This demonstrates that the linguistic aspects and the integration of local cultural context in the module are already very good and effectively support the learning process.

Overall, the three expert evaluations yielded high feasibility scores, ranging from 90% to 95%. These results affirm that the developed interactive module falls into the "highly feasible" category and can be used as an effective learning medium to enhance students' mastery of Arabic vocabulary through a local wisdom-based and culturally responsive approach.

Students' Questionnaire Results

After the team completed two learning themes, namely The History and Definition of Loanwords and Forms of Borrowing Arabic Vocabulary into the Bima Language, a set of ten questions was administered to the students to gather their responses regarding the effectiveness of the interactive learning module applied in the classroom.

The following presents the results of the students' questionnaire data analysis using descriptive statistical tests:

Table 3. Results of Students' Questionnaire

| School | Learning Theme | N | Mean | Median | Mode | Std Dev | Min | Max |
|-----------|--------------------|----|-------|--------|------|---------|-----|-----|
| MAN 2 | Learning Theme 1-2 | 29 | 43,24 | 43 | 43 | 2,52 | 37 | 48 |
| Bima City | Learning Theme 3-4 | 29 | 45,62 | 46 | 45 | 1,88 | 42 | 50 |
| MAN 2 | Learning Theme 1-2 | 18 | 40,50 | 41 | 41 | 0,92 | 38 | 42 |
| Bima | Learning Theme 3-4 | 18 | 41,72 | 42 | 42 | 1,13 | 38 | 43 |

Based on the descriptive analysis of the students' questionnaires, it was found that, in general, the interactive module on Arabic loanwords in the Bima language was considered highly feasible for use in the learning process.

At MAN 2 Kota Bima, the mean score for Themes 1–2 was 43.24, with a median of 43 and a mode of 43, and a standard deviation of 2.52. The lowest score obtained by students was 37, while the highest score reached 48. These results indicate that students' responses; however, the overall tendency remained positive. For Themes 3–4, the mean score increased to 45.62, with a median of 46 and a mode of 45. The smaller standard deviation (1.88) suggests that students' evaluations were more homogeneous compared to the previous themes. The minimum score recorded was 42 and the maximum 50, showing that almost all students gave high ratings.

Meanwhile, at MAN 2 Bima, the mean score for Themes 1–2 was 40.50, with a median of 41 and a mode of 41, and a standard deviation of 0.92. The score range was relatively narrow, between 38 and 42, which shows the consistency of students' assessments. For Themes 3–4, the mean score increased to 41.72, with both the median and mode at 42, and a standard deviation of 1.13. The lowest score was 38 and the highest 43, indicating that students' evaluations remained stable and positive.

Overall, in both MAN 2 Kota Bima and MAN 2 Bima, there was an increase in mean scores from Themes 1–2 to Themes 3–4. This pattern suggests that sustained use of the module led to greater student appreciation of its content, presentation, and contribution to the learning process. Therefore, it can be concluded that the developed interactive module received very positive responses from students and can be categorized as "highly feasible" for instructional use.

Teachers' Questionnaire Results

Table 4. Results of Teachers' Observation on the Learning Process

| Teacher Respondent | Total Score | Maximum Score | Percentage | Mean | Category |
|--------------------|--------------|---------------|---------------|-------------|------------------------|
| XI IPA-8 | 47 | 50 | 94.00% | 4.70 | Highly Feasible |
| XI IPA-7 | 48 | 50 | 96.00% | 4.80 | Highly Feasible |
| XI D | 49 | 50 | 98.00% | 4.90 | Highly Feasible |
| XI E | 49 | 50 | 98.00% | 4.90 | Highly Feasible |
| Average | 48.00 | 50 | 96.00% | 4.80 | Highly Feasible |

The results of teachers' observation on the learning process indicate that the interactive module was rated in the Highly Feasible category by all respondents. Teacher XI IPA-8 obtained a total score of 47 out of 50 (94.00%, mean = 4.70), Teacher XI IPA-7 scored 48 (96.00%, mean = 4.80), and Teacher XI D & E scored 49 (98.00%, mean = 4.90). The overall average was 48.00 out of 50 (96.00%, mean = 4.80), which falls within the Highly Feasible range. These findings suggest that the

module is not only feasible but also effective in supporting the learning process, as observed consistently across different teachers.

Table 5. Module Trial Questionnaire Results

| Teacher Respondent | Total Score | Maximum Score | Percentage | Mean | Category |
|--------------------|--------------|---------------|---------------|-------------|------------------------|
| XI IPA-8 | 47 | 50 | 94.00% | 4.70 | Highly Feasible |
| XI D | 49 | 50 | 98.00% | 4.90 | Highly Feasible |
| Average | 48.00 | 50 | 96.00% | 4.80 | Highly Feasible |

The results of the module trial questionnaire show that teachers evaluated the interactive module as Highly Feasible. Teacher XI IPA-8 obtained a score of 47 out of 50 (94.00%, mean = 4.70), while Teacher XI D achieved a score of 49 out of 50 (98.00%, mean = 4.90). The overall average score was 48.00 out of 50 (96.00%, mean = 4.80), which also falls within the Highly Feasible category. These consistently high evaluations indicate that the module is considered highly appropriate and effective for use in Arabic language learning, as reflected in the consistently high evaluations from teachers during the trial.

The findings of this study confirm that the integration of Arabic loanwords from the Bima language into an interactive learning module significantly improved students' vocabulary mastery and motivation. This result aligns with Limbong et al., who demonstrated that the Contextual Teaching and Learning (CTL) approach enhances learning outcomes when instructional materials are designed to connect academic content with learners' real-life experiences.³⁶ By embedding familiar Bima loanwords into Arabic instruction, the module created meaningful contextual links that allowed students to construct new vocabulary knowledge more effectively. Such contextualization reflects core CTL principles—particularly constructivism, inquiry, and authentic learning—which emphasize that students learn best when new information is tied to their cultural and linguistic environment.

In addition, the findings confirm that the integration of Arabic loanwords from the Bima language into an interactive learning module significantly improved students' vocabulary mastery and motivation. This result resonates with the principles of Culturally Responsive Teaching (CRT) as articulated by Villanueva and Eike, who demonstrated that culturally responsive pedagogy in online learning environments can strengthen student engagement, identity construction, and learner agency.³⁷ By embedding familiar Bima loanwords into Arabic instruction,

³⁶ Sunarlia Limbong et al., "Can Contextual Teaching and Learning (CTL) Revolutionize Cadets' Speaking Skills in Maritime English?," *Voices of English Language Education Society* 8, no. 2 (2024), <https://doi.org/10.29408/veles.v8i2.26651>.

³⁷ Irma D Villanueva and Rachel Jean Eike, "Culturally Responsive Activities for Relevant Asynchronous CAD Patternmaking Courses," paper presented at Making Waves Toward A Sustainable

the module provided students with highly meaningful associations tied to their everyday linguistic environment, thereby making their acquisition of new vocabulary not only more effective but also more personally and culturally relevant.

The effectiveness of the module also aligns with broader linguistic theories on loanword adaptation as discussed in international research. Studies in loanword phonology show that borrowed words typically undergo systematic phonological and semantic adjustments to fit the structural patterns of the receiving language.³⁸ Such adaptations occur because speakers map unfamiliar sounds or meanings from the donor language onto categories that are more natural within their own linguistic system. This phenomenon is clearly observable in the Bima context, where Arabic-origin words—such as *kahawa* (from Arabic *qahwah*)—have been fully integrated into everyday speech through predictable adaptation processes. With the incorporation of these naturalized loanwords into formal Arabic instruction, the module not only strengthens students' vocabulary acquisition but also validates their linguistic identity and acknowledges the living interplay between Arabic and the Bima language.

In comparison to previous studies, this research offers a distinct yet complementary contribution to Arabic vocabulary pedagogy. Prior works, such as Mahmudah, demonstrated that vocabulary mastery and learner confidence are key challenges for non-native Arabic learners.³⁹ While Ren and Su revealed that recent advances in digital tools and interactive technologies significantly support vocabulary acquisition.⁴⁰ Meta-analytic evidence on multimedia glosses has also shown medium-to-large effects on second-language vocabulary learning, highlighting the value of multimodal input in deepening lexical understanding. Likewise, Laiya reported that gamified models for Arabic vocabulary instruction enhance learner engagement and are positively perceived by teachers.⁴¹

Unlike these studies, the present research adopts a culturally grounded approach: instead of relying solely on technology-based or gamified strategies, it

and Equitable Future, *Making Waves Toward A Sustainable and Equitable Future*, Iowa State University Digital Press, January 15, 2025, <https://doi.org/10.31274/itaa.18636>.

³⁸ Ahmed Hamid Abdulrazzaq and Sundus Muhsin Ali Al-Ubaidy, "Models of Phonological Loanword Adaptation: The Optimality Model as Opposed to the Perceptual and Phonological Models," *Al-Adab Journal* 3, no. 144 (2023): 17–24, <https://doi.org/10.31973/aj.v3i144.3881>.

³⁹ Menik Mahmudah, "Enhancing Arabic Vocabulary with *Hilyah* Book," *Al-Muhawaroh: Jurnal Pendidikan Bahasa Arab* 1, no. 1 (2025): 1–11, <https://doi.org/10.38073/almuhawaroh.v1i1.2427>.

⁴⁰ Chunhua Ren and Lin Su, "The Role of Digital Tools in Enhancing Vocabulary Acquisition in Second Foreign Language Learning," *Journal of Contemporary Educational Research* 9, no. 7 (2025): 376–81, <https://doi.org/10.26689/jcer.v9i7.11388>.

⁴¹ Fidya Fadila Safriana Laiya, "Design and Implementation of Gamification-Based Arabic Language Learning Materials through the Quizizz Application to Enhance Students' Motivation and Interactivity," *Albariq: Jurnal Pendidikan Bahasa Arab* 6, no. 1 (2025): 111–35, <https://doi.org/10.24239/albariq.v6i1.118>.

bridges these innovations with the linguistic realities of Bima learners by integrating naturally occurring Arabic loanwords into an interactive module.

Taken together, these findings reinforce the argument that culturally grounded and contextually relevant learning resources are more effective than conventional textbook-based instruction. Such resources not only support vocabulary acquisition but also foster student motivation and cultural awareness, making Arabic language learning more sustainable and meaningful for students in Bima.

Conclusion

This study concludes that an interactive learning module based on Arabic loanwords in the Bima language was successfully developed, validated, and implemented as a contextual learning resource for Arabic instruction. Expert validation results indicate that the module is highly feasible in terms of content, language, and instructional design, confirming its suitability for classroom use.

The findings from field implementation demonstrate that the module was effective in supporting students' learning, as reflected in consistently positive student responses and increasing appreciation of the module's content, presentation, and usefulness over time. Teachers also evaluated the module very positively, indicating that it is practical and relevant as a supplementary instructional material in Arabic language learning. These results suggest that integrating locally familiar Arabic loanwords into formal instruction can enhance vocabulary learning, learner engagement, and cultural relevance, thereby bridging the gap between students' everyday linguistic experiences and standard Arabic learning materials.

Nevertheless, despite its promising findings, this study has certain limitations, as it was only conducted in two schools with a limited number of samples and within a relatively short period of time; therefore, its long-term effects and generalizability still need to be further examined. Consequently, future research is recommended to involve more schools and grade levels, extend the duration of module implementation, and develop the module into digital or multimedia-based formats to make it more accessible, engaging, and sustainable as supplementary teaching material in Arabic language learning.

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Author Contribution Statement

NZ contributed to the research concept, framework design, and supervision. SW was responsible for methodology, data analysis, and expert validation. NHN, MR, and SD contributed to data processing, manuscript editing, and final writing tasks. All authors discussed the results and approved the final version of the article.

Declaration of Competing Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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