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Development of Web-Based Isim Dhamir Interactive Learning Media for Class XI Madrasah Aliyah Students

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Abstract

This study aims to develop a web-based interactive learning media on *isim dhamir* to improve the comprehension and learning autonomy of eleventh-grade students at MA Miftahul Ulum Al-Azizah. The study stems from students' low interest in learning Arabic grammar, mainly due to the use of conventional teaching methods that do not align with the characteristics of digital-native learners. The research employed the Research and Development (R&D) method using the ADDIE model, consisting of analysis, design, development, implementation, and evaluation stages. Validation results showed a content feasibility level of 97.72% and a design quality score of 96.21%, indicating that the media is highly appropriate and engaging. A limited trial was conducted with 21 students as the sample. In the effectiveness test, a Paired Sample T-Test yielded a Sig. (2-tailed) value of 0.000 < 0.05, indicating a statistically significant difference between pre-test and post-test results. The students' average score increased from 24.6 to 85.4, with a gain of 60.8 points. Moreover, the correlation value of r = 0.666 demonstrated a strong positive relationship between the two scores. The developed product includes explanations of *isim dhamir*, interactive quizzes, educational games, and an online score-tracking system. The findings confirm that this media effectively enhances learning outcomes and makes the learning process more engaging. However, the study is limited by its small sample size and focus on a single grammatical topic.

Keywords: Interactive Learning Media, Isim Dhamir, Web-Based, Arabic Grammar, Research and Development (R&D), ADDIE model

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INTRODUCTION | مقدمة

At present, the process of teaching Arabic at the Madrasah Aliyah level faces significant challenges in attracting students' interest and improving their understanding of grammatical materials such as *isim dhamir* (Sundari & Ahmadi, 2024). One contributing factor is the dominance of conventional methods that are not interactive and are less responsive to the needs of the digital generation (Mabrurrossi, 2020). Meanwhile, developments in educational technology have opened substantial opportunities for the use of web-based media that are interactive and adaptive to students' learning styles (Nasir, 2024). For instance, the use of Sparkol Videoscribe has been shown to improve students' mastery of *isim isyarah* in Arabic learning (Sundari & Ahmadi, 2024). Other studies also indicate that interactive applications based on Adobe Flash and educational games such as Wordwall help students recognize and apply *dhamir* in contextual settings (Supriadi & Haslinda, 2022). Moreover, syntactic errors that frequently occur in the use of *isim dhamir* can be minimized through digital learning media designed according to the needs of the Madrasah Aliyah curriculum (Ma'suq et al., 2024). Therefore, the

development of web-based interactive media is not only pedagogically relevant but also serves as a concrete response to the demands of digital transformation in Arabic language education in the technological era.

The development of interactive media in Arabic language learning has become a central focus in many studies, particularly in improving students' grammatical comprehension (Muhaemin & Wahyuni, 2021). The study by Mizan et al., (2022) designed an Android-based learning medium for *isim dhamir* at the senior high school level; however, it was not web-based and did not examine its effectiveness within the madrasah context. Meanwhile, Syagif, (2024) highlighted the importance of visual interactivity in understanding the position of *isim* within object and genitive constructions, yet the approach was not aligned with the Madrasah Aliyah curriculum. The research by Nuriyah et al., (2025) only addressed active learning strategies based on operant conditioning theory, without developing any specific digital learning media. Thus, a gap remains in the literature concerning web-based interactive media specifically designed to teach *isim dhamir* within the learning context of Madrasah Aliyah. This study seeks to bridge that gap by presenting a technology-based, applicable approach tailored to the needs of MA students.

Many studies have discussed the use of interactive media in Arabic language learning, including at the madrasah level; however, the development of web-based media specifically designed to teach *isim dhamir* remains very limited (Alpian, 2021). Several studies, such as those conducted by Alpian, indicate that website-based interactive media can enhance student engagement in learning *isim*, *fi'il*, and *harf*, but they do not specifically address the aspect of *isim dhamir*. Meanwhile, Luhfi, (2025) focuses more on developing instructional methods, yet does not explore the integration of practical web-based learning technologies. In addition, (Mabrurrossi, 2020) criticizes Arabic textbooks that still rely on conventional approaches, although he acknowledges the need for contextual online learning. Based on this literature, no web-based interactive media has been found that explicitly presents *isim dhamir* content through visual approaches, contextual practice, and automated assessment integration. This gap indicates an urgent need to develop media that not only supports theoretical understanding but also enhances students' practical skills in using *isim dhamir* within sentences.

In addition, the *Kurikulum Merdeka* emphasizes the importance of strengthening self-regulated learning as part of its effort to develop students' learning autonomy (Mardiana & El-Rumi, 2021). In Arabic language learning, particularly in grammatical material such as *isim dhamir*, the ability to manage one's own learning process becomes crucial for students to understand concepts in a sustainable and applicable manner. Web-based learning media has strong potential to support this need, as it offers flexible access, multimodal interaction, and automatic feedback that enables students to learn according to their own pace and learning style (Oktaviani & Kuswandi, 2024). This approach is highly relevant for Generation Z learners who grow up as digital natives and are accustomed to digital learning ecosystems (Hammad, 2025). Thus, the development of web-based interactive media not only serves as a solution to low student interest but also aligns with the principles of learning autonomy promoted by the *Kurikulum Merdeka*, making the learning experience more adaptive, personalized, and student-centered.

The urgency of mastering *isim ḍamīr* as a fundamental element of Arabic grammar is crucial for enhancing students' syntactic competence in madrasah settings, since the accurate use of pronouns determines the coherence and clarity of sentences (Hapianingsih & Fadli, 2024). However, many students continue to struggle with understanding the concept of *ḍamīr*, largely due to conventional, teacher-centered instructional approaches (Suhaemi, 2020). In the midst of

rapid advancements in educational technology, the use of web-based interactive media has become highly relevant for addressing the needs of digital-era learners who are accustomed to multimedia interaction (Sanwil et al., 2021). Previous studies indicate that digital tools such as Lectora Inspire and Macromedia Flash can support the learning of vocabulary (*mufradāt*) and grammar (*qawā'id*), yet few have specifically focused on developing web-based learning media for *isim ḍamīr* within the Madrasah Aliyah context (Muhaemin & Wahyuni, 2021). Moreover, the weak implementation of online learning in MA institutions has created a gap between curricular demands and actual classroom practices (Fahrudin, 2023). Therefore, this research emerges as an innovative and practical solution that integrates grammatical instruction with digital technology. By developing interactive and adaptive web-based learning media, students are expected not only to understand the concept of *isim ḍamīr* theoretically but also to apply it accurately within meaningful communicative sentence structures.

The learning of *isim ḍhamīr* in Madrasah Aliyah still frequently encounters various obstacles, both in terms of students' grammatical comprehension and the limited availability of instructional media that support contextual and interactive learning. Meanwhile, the use of technology-based instructional media has been proven to enhance students' absorption of Arabic grammatical materials (Fitri & Hasibuan, 2024). Mahbub & Nasrullah, (2023) emphasize that *isim ḍhamīr* is a foundational component in sentence construction, yet its instruction has largely remained theoretical and lacks contextual digital simulations. Therefore, this study aims to develop a web-based interactive learning medium for teaching *isim ḍamīr*, designed to strengthen visual understanding, learner interaction, and self-assessment for Grade 11 students at MA Miftahul Ulum Al-Azizah.

In general, this study aims to: develop a web-based interactive learning media focused on *isim ḍamīr* material and examine its feasibility and effectiveness in improving students' understanding and mastery of *isim ḍhamīr*.

METHOD | منهج

This study falls under the category of Research and Development (R&D), aiming to produce an interactive web-based learning medium for the topic of Isim Dhamir in Arabic language instruction. The development was carried out to enhance students' learning autonomy and interest at MA Miftahul Ulum Al-Azizah Sumberbaru in 2025. The ADDIE model was applied because it is systematic and allows for evaluation at every stage (Dafit & Mustika, 2021). The process began with a needs analysis, which examined students' comprehension difficulties, learning tendencies, and the characteristics of eleventh-grade learners. The results indicated that learning was still conventional, insufficiently interactive, and did not yet support independent learning; therefore, a web-based medium that is easily accessible and aligned with students' contemporary learning styles was required.

The design stage involved constructing the structure of the medium, navigation flow, visual layout, and interactive activities through storyboards and wireframes. During the development stage, the medium was produced using Canva Coding technology. Canva Coding (Canva Code) is Canva's latest AI feature that enables users to create applications, interactive websites, or various functional digital content solely through text descriptions (Priambodo, 2025). Users do not need prior programming skills because the system automatically converts instructions and visual designs into executable code. This feature is highly useful for producing digital portfolios, interactive learning media, and simple application prototypes such as calculators, quizzes, or informational pages with interactive elements. Prepared learning materials can be uploaded into

the system and then processed by Canva into a neat, appealing, and responsive web display. The generated code can be published as a web page that is easy to share with students or other users (Xiao et al., 2023).

In addition to presenting materials in textual and visual forms, Canva Coding also allows the integration of interactive elements such as educational games and practice exercises. This feature provides automatic feedback in the form of scores, badges, or rewards, thereby enhancing student motivation and engagement. Thus, the developed medium is not only informative but also encourages active participation in the learning process.

After the initial product was completed, validation was conducted by material and media experts using a four-point Likert-scale questionnaire (Simamora, 2022). The material expert was Kusairi, M.Pd, the Arabic language instructor, while the media expert was Musleh, S.Pd.I., M.Pd, a member of the IT team at MA Miftahul Ulum Al-Azizah. The material-expert questionnaire contained 11 items, such as “The Isim Dhamir material is presented according to nahwu principles,” “Examples of Isim Dhamir usage are easy for students to understand,” and “The difficulty level aligns with the characteristics of MA students.” The media-expert questionnaire consisted of 14 items, including “Navigation between pages is easy to use,” “Interactive elements function properly,” and “The color combination supports readability.” The product was then tested on 21 students through a limited implementation. The trial included a pre-test consisting of 50 multiple-choice items.

All data from the validation and evaluation stages were analyzed using descriptive quantitative methods. The feasibility score from the Likert scale obtained from the expert questionnaires was converted into a percentage using the formula: Percentage = (Obtained Score / Maximum Score) × 100% (Simamora, 2022). In addition to feasibility, this study also assessed the effectiveness of the media through the difference between pre-test and post-test scores, which indicates the level of improvement in students’ mastery of Isim Dhamir. This analysis provides a comprehensive overview of content quality, technical feasibility, interactive quality, and media effectiveness in learning. By fully implementing the ADDIE model, the developed medium is expected to support more active, independent, and engaging Arabic language learning.

RESULT | نتائج

Developed Products

The main focus of this study is to develop a web-based learning medium on *Isim Dhamir* so that students have the opportunity to learn independently, meaning that the learning process is not centralized nor dependent on the teacher. The research was conducted at Madrasah Aliyah Miftahul Ulum Al-Azizah, Sumberbaru, in 2025. The method employed in this study is Research and Development (R&D) using the ADDIE model, which implies that the development process must follow five key stages: Analysis, Design, Development, Implementation, and Evaluation.

The analysis stage aims to obtain information related to students’ interests and their learning needs. The first step in this phase was examining the characteristics of the learners by conducting interviews with eleventh-grade students at MA Miftahul Ulum Al-Azizah Sumberbaru. This initial analysis was intended to identify what students enjoy. Based on the interview results, it was found that the students were very bored with the conventional methods used in class, indicating the need for content delivery that is unique, interactive, and accessible even after

school hours.

The second stage of analysis involved identifying the specific learning needs of the students. From this stage, it was revealed that the difficulties in learning *Isim Dhamir* stemmed from material presentation that was not systematic, lacked detail, provided too few examples, and did not include contrastive explanations with the students' mother tongue. A deeper, third analysis indicated that the explanation of *Isim Dhamir* taught at MA Miftahul Ulum Al-Azizah tended to be too brief, unappealing, and too difficult to understand. Therefore, there was an urgent need to develop an interactive web-based learning medium on *Isim Dhamir*.

The next stage after analysis was designing the instructional media. This process began with opening a Canva workspace and activating the Canva Coding feature (AI Website Generator). The first step was inputting descriptive prompts regarding the purpose of the learning medium, target users, and the desired visual style, as well as preparing the materials to be embedded in the final design.

The learning materials were sourced from the eleventh-grade Arabic textbook authored by Yusuf Saefullah and strengthened with relevant online references. The uploaded content included a detailed definition of *Isim Dhamir*, a comparative analysis between Arabic and Indonesian pronouns, categories of *Isim Dhamir* (bariz–mustatir, muttasil–munfasil), and functional details such as *dhamir marfu'*, *mansub*, *majrur*, obligatory and permissible pronoun forms, along with their usage in sentences. All materials were structured using hyperlinks to ensure easy navigation.

Once all content was integrated, Canva Coding automatically generated the final code, which could then be published as a website. The site was uploaded using Canva's publishing feature, producing a shareable link accessible to students via mobile phones or laptops.

Based on the material developed, the researcher created several interactive exercises and games in the form of quizzes to support students' understanding. These exercises were designed to help students grasp *dhamir* comprehensively. Additionally, a game was included that challenges students to arrange pronouns according to their meanings and functions.

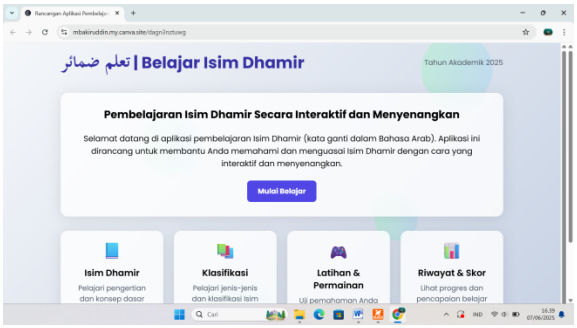

Figure 1. Main Page of the Web-based Learning Media Product *isim dhamir*

When users first open this learning media, they are welcomed by a Main Menu display that is simple yet meaningful. At the opening section sits a warm greeting: "Welcome," accompanied by motivational words carefully crafted to ignite enthusiasm, especially for teachers who serve as the backbone of education. These lines act as an initial source of energy, building a positive atmosphere before beginning the learning journey.

Just below the greeting, there is a button labeled "Start Learning," which serves as the gateway to the core content. This button is not merely an interface element, but a symbol of entering an exploration of knowledge designed to be interactive and enjoyable.

Once the user presses the button, the screen transitions to a new view presenting four main menus, all focused on the material of *Isim Dhamir*. Each menu is arranged in a logical sequence to ensure clarity, even for beginners.

The first menu leads users to foundational knowledge, offering a detailed definition of *Isim Dhamir* along with a contrastive analysis that compares pronoun usage inism Arabic with those in other languages. This provides a fresh perspective and broadens students' understanding of linguistic structures.

The second menu presents a systematic classification of *Isim Dhamir*. Here, users are introduced to various types of pronouns based on form, position, and function within sentences. The interactive presentation helps simplify concepts that might previously have seemed complex.

Next, the exercises and games menu provides space for students to apply their understanding in a practical way. The varied question sets and engaging educational games enliven the learning process. They not only assess comprehension but also build emotional engagement with the material.

Lastly, the history and score section records all user learning activities. Through this feature, students can monitor their progress, identify strengths and weaknesses, and stay motivated to continue improving.

With its user-friendly design and well-structured content, this learning media not only creates an enjoyable learning experience but also establishes a digital ecosystem that encourages active engagement in understanding Arabic more deeply and contextually.

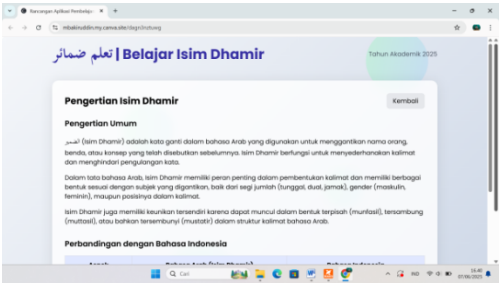

Figure 2. Menu for defining *isim dhamir*

The *Isim Ḍhamīr* menu presents learning material that explains the concept and definition of *isim ḍhamīr* in a clear and comprehensive manner. It introduces pronouns in Arabic as elements used to replace nouns, arranged systematically so they are easy to understand for learners with different levels of proficiency. In addition to the definition, this menu includes a contrastive analysis comparing Arabic pronouns with Indonesian pronouns. This approach helps students understand *isim ḍhamīr* in a more contextual and practical way by linking unfamiliar linguistic features to their native language. The inclusion of this contrastive analysis is expected to simplify the internalization of Arabic grammatical concepts, as students are able to identify similarities and differences between both language systems. As a result, their understanding becomes more concrete, logical, and applicable in daily language use.

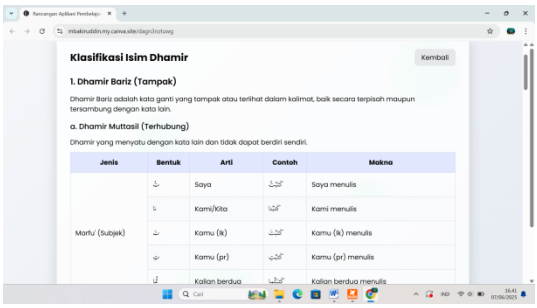

Figure 3. Menu for classifying *isim dhamir*

In the classification menu, the material presents a complete explanation of the categories of *isim ḍhamīr* (pronouns) in Arabic. The content is designed systematically and comprehensively to help learners understand the fundamental concept of *ḍhamīr* in a holistic way. The explanation begins with the general definition of *isim ḍhamīr*, namely a word used to replace a noun in a sentence to avoid repetition. The material then continues with the classification of *isim ḍamīr* based on several categories, such as number (singular, dual, and plural), gender (masculine and feminine), and grammatical position within a sentence (as subject, object, or *muḍāf ilayh*).

Each category is explained not only theoretically but also supported by contextual sentence examples. These examples are presented both in Arabic and accompanied by their Indonesian translations to ensure clarity of meaning. Additional explanations are provided for the function of each pronoun—whether used as a subject or object—so that students can clearly identify its grammatical role.

The purpose of this menu is to equip students with a deep understanding of how *isim ḍamīr* operates within various Arabic sentence structures. This ensures that students do not only recognize its forms in theory but are also able to apply them actively in oral and written communication. Consequently, this menu becomes an essential part of the learning material, supporting the mastery of practical and communicative Arabic grammar.

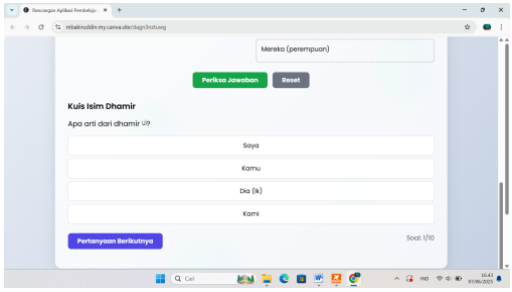

Figure 4. Game and Quiz Menu *isim dhamir*

In the game and quiz menu, two types of interactive and engaging learning activities are provided to strengthen students' understanding of the material: a drag-and-drop game and a multiple-choice quiz. The drag-and-drop activity allows learners to actively move and place specific elements—such as words, images, or symbols—into the correct categories or positions, helping enhance their cognitive and motor skills while reinforcing their visual understanding of Arabic language structures. Meanwhile, the multiple-choice quiz is designed to assess students' comprehension more systematically and objectively by presenting a series of questions with several answer options, requiring them to select the most accurate response based on what they have learned.

After completing both activities, the scores that students obtain are automatically recorded and can be accessed through the history and score menu. This feature serves as a learning

progress log, enabling learners to monitor their improvement over time and helping educators evaluate the effectiveness of instruction while providing appropriate follow-up actions based on each student's performance.

Product Suitability

After undergoing validation by experts, the results showed that the material aspect received a score of 97.72%, while the media design aspect achieved 96.21%. These evaluations were based on a four-point Likert scale, where 1 = Poor, 2 = Fair, 3 = Good, and 4 = Very Good. The questionnaires were assessed by two validators: Kusairi, M.Pd. as the material expert and Musleh, S.Pd.I., M.Pd. as the media expert.

In the material expert questionnaire, there were 11 items assessing the quality of instructional content. These items included: (1) alignment of the Isim Dhamir material with nahwu principles; (2) clarity of definitions; (3) completeness of categories and classifications; (4) accuracy of the provided examples; (5) comprehensibility of examples for students; (6) suitability of material difficulty level; (7) relevance to learning objectives; (8) consistency of terminology; (9) logical sequencing of presentation; (10) readability of the text; and (11) relevance of the material to students' context. Most items received a score of 4, resulting in a cumulative value close to the maximum score.

Meanwhile, the media expert questionnaire consisted of 14 items evaluating the feasibility of the visual and technical design. These items covered: (1) ease of navigation; (2) layout consistency; (3) proper functionality of buttons; (4) comfortable color combinations; (5) font readability; (6) quality of illustrations; (7) design responsiveness; (8) neat arrangement of elements; (9) clarity of instructions; (10) functionality of interactive elements; (11) appropriate font size; (12) smoothness of animations or effects; (13) structural order of information; and (14) availability of learning support features. The majority of these items also received a score of 4, reflecting excellent visual quality and interactivity.

The validation score calculation process was carried out using the Likert scale percentage formula, in which the obtained score is compared with the maximum possible score and then multiplied by 100%. In the material expert questionnaire, which contained 11 items, the maximum score was 44, obtained from multiplying 11 items by the highest Likert value, which is 4. The validator provided a total score of 43, which was calculated using the formula $43 \div 44 \times 100$, resulting in 97.72%. This percentage indicates that the quality of the material falls into the "Highly Feasible" category.

The calculation for the media design aspect followed the same procedure. The media expert questionnaire consisted of 14 items, producing a maximum score of 56. The validator awarded a total score of 54, which, when processed using the formula $54 \div 56 \times 100$, produced a percentage of 96.21%. This score signifies that the media's visual design and technical functionality are also categorized as "Highly Feasible."

Together, these results confirm that the developed web-based learning media meets the feasibility standards for both content and design, as all validation scores exceed the 90% threshold.

Product Effectiveness

After the product was declared feasible based on expert validation results, the next stage was the effectiveness test to determine the extent to which the web-based interactive learning media could improve students' understanding of *Isim Dhamir*. The effectiveness test was

conducted by administering a pre-test and post-test to 21 eleventh-grade students as the research sample. The pre-test and post-test scores were then analyzed quantitatively using SPSS version 17.1, employing the Paired Sample T-Test to examine the difference in students' abilities before and after using the media.

Data processing using SPSS 17.1 showed that the Sig. (2-tailed) value was 0.000, which is lower than the significance threshold of 0.05. This finding indicates a statistically significant difference between the pre-test and post-test scores, meaning that the improvement in students' comprehension was genuinely influenced by the use of the media rather than by chance. The results also revealed a substantial increase in the students' average scores—from 24.6 on the pre-test to 85.4 on the post-test—resulting in a gain of 60.8 points. This significant improvement confirms that the developed web-based media had a strong impact on enhancing students' understanding of *Isim Dhamir*.

In addition to the mean difference test, a correlation analysis between pre-test and post-test scores was performed using SPSS 17.1. The analysis produced an r-value of 0.666, which falls into the category of a strong positive correlation. This means that students with low or moderate initial abilities also showed significant improvement after using the interactive learning media. The media proved effective not only for students who had already grasped part of the concept, but also for those who initially faced difficulties.

The media features include explanations of *Isim Dhamir*, web-based interactive quizzes, educational games, and an online score-tracking system that provides automatic feedback. These features were shown to enhance students' motivation and engagement throughout the learning process. Nonetheless, this study has several limitations, such as the relatively small sample size and the focus on a single grammatical topic. Therefore, further research involving a broader range of materials and a larger number of participants is highly recommended.

DISCUSSION | مناقشة

The feasibility test showed that the web-based interactive learning media for the topic of *Isim Dhamīr* was rated highly feasible, with material validation reaching 97.72% and design validation reaching 96.21%. After being declared feasible, the media was tested for effectiveness through pre-test and post-test involving 21 eleventh-grade students, and the SPSS 17.1 analysis produced a Sig. (2-tailed) value of 0.000 (< 0.05), accompanied by an increase in the average score from 24.6 to 85.4, or a gain of 60.8 points. A correlation value of r = 0.666 indicated a strong positive relationship between students' initial ability and their learning gains, confirming that the media is effective for learners with varying skill levels. These findings affirm that the developed web-based learning media is not only feasible but also highly effective in improving students' understanding of *Isim Dhamīr*.

The main problem identified from the needs analysis is the gap between students' contemporary learning styles and teaching methods that tend to be monotonous and text-based. The lack of visual elements, structural analysis, and cross-linguistic connections makes it difficult for students to understand Arabic grammar such as *isim dhamīr* (Yogaraksa et al., 2024). The absence of linguistic contrast between the mother tongue and the target language also creates obstacles in transferring meaning and the function of pronouns (Qomaruddin, 2022). This indicates the growing need for learning media that can bridge theoretical knowledge with practical language use in a visual, contextual, and applicable manner. Therefore, the development of web-based digital media becomes a logical solution to address contemporary

instructional challenges in the context of madrasah education.

The implementation of this web-based media directly improves the quality and effectiveness of students' learning processes related to *isim dhamīr*. Digital educational games and quiz-based activities not only enhance cognition but also create a more dynamic and interactive learning atmosphere (Hidayati & Budiarti, 2022). Internet-based accessibility provides learning flexibility beyond the classroom, which is a defining characteristic of the digital generation (Sitompul, 2022). This media not only aids conceptual understanding but also fosters independent and continuous learning habits, which are essential within the Merdeka Belajar curriculum framework.

From a design perspective, this study differs from previous research by NURMAULIDA, (2024), which utilized Wordwall as a practice tool. Although Wordwall is practical and basically interactive, it has significant limitations in visual personalization and lacks an advanced score-tracking system. The platform does not allow custom adjustments to interface elements—such as color schemes, layout, typography, or navigation structure—that align with the psychological and visual characteristics of madrasah teenagers, who tend to be visual, dynamic, and explorative.

In contrast, this study's use of Canva Coding functions not only as a visual aid but also as an interactive learning medium with strong aesthetic and technical flexibility. Users are free to customize the learning design according to the visual identity of the target students, including color combinations, iconography, and typography suited to youth preferences. Its drag-and-drop features, interactive navigation buttons, and multimedia enrichment (images and animation) create a more immersive and enjoyable learning experience.

Studies by Purba & Mm, (2024) show that Canva enhances learning appeal through visually engaging and intuitive displays. This aligns with research by Ekasari et al., (2025), which emphasizes that Canva supports design flexibility and enables multimedia integration, both of which are essential in 21st-century learning. Visual components have been proven to play an important role in increasing learning motivation, cognitive focus, and students' emotional engagement (Fauziah et al., 2022).

Thus, Canva Coding offers advantages not only in the technical production of media but also in addressing students' affective and cognitive dimensions—areas often overlooked in question-based platforms such as Wordwall. Canva Coding effectively responds to modern learning demands that require visual, flexible, and enjoyable media without compromising essential pedagogical objectives.

Based on these findings and comparisons, recommendations are provided across three dimensions: conceptual, methodological, and policy-related. Conceptually, it is important to align instructional design with applied linguistic approaches such as cross-linguistic analysis. Methodologically, the iterative, user-based ADDIE model should be widely adopted by developers of madrasah educational media. From a policy perspective, educational institutions and the Ministry of Religious Affairs should promote the integration of digital technology into the curriculum, including teacher training on digital content development and providing funding access for online learning infrastructure. With these efforts, Arabic language education can become more relevant, enjoyable, applicable, and inclusive.

CONCLUSSION | خاتمة

This study concludes that the development of a web-based interactive learning media for the *isim dhamīr* topic is considered feasible and highly acceptable for implementation in Arabic language learning at the Madrasah Aliyah level. The media, developed using the ADDIE model, includes a needs analysis of students, content design based on textbooks and contrastive analysis, as well as product development through Canva Coding with an aesthetic and interactive design. Expert validation shows that the content aspect achieved a feasibility score of 97.72%, while the visual design and interactivity aspects achieved 96.21%. The effectiveness test produced a significance value of 0.000, indicating a difference between pre-test and post-test scores in the trial group.

This media contributes to improving students' understanding of *isim dhamīr*, which was previously perceived as abstract and difficult to comprehend through conventional methods. Student engagement increased through educational games and automatic scoring features that support independent learning, while the contrastive analysis between Arabic and Indonesian helped explain grammatical relations in a logical and contextual manner. These findings indicate that web-based technology can serve as a practical alternative to strengthen language learning in the digital era.

Despite these positive indications, several limitations were found. The effectiveness test was limited to a single school and one grade level, making generalization difficult. The media also has not yet included explicit basic competencies, learning indicators, and learning objectives, and still lacks advanced multimedia integration such as instructional videos or Arabic voice-overs that could enrich the auditory learning experience.

For future development, broader trials across different educational levels accompanied by long-term cognitive impact evaluation are recommended to strengthen the external validity of the media. Content improvement should include learning outcomes, competency indicators, and evaluation rubrics to align with the current curriculum. Adding multimedia features such as voice narration, interactive videos, and adaptive scoring responses will further enhance learning quality. Additionally, collaboration with Arabic language teachers is essential to ensure that the media remains applicable, integrated, and sustainable within classroom instructional practices in madrasah settings.

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