

DEVELOPMENT OF WORDWALL-BASED INTERACTIVE ASSESSMENT MEDIA FOR NAHWU LEARNING AT PESANTREN LUHUR MALANG HIGHER EDUCATION INSTITUTION

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ABSTRAK

Asesmen pembelajaran nahwu di pesantren pada umumnya masih bergantung pada pendekatan konvensional berbasis kertas yang cenderung monoton, sehingga berdampak pada menurunnya antusiasme santri selama pengerjaan ujian berlangsung. Di samping itu, keterbatasan asesmen konvensional dalam memberikan umpan balik secara langsung menjadikan santri tidak dapat segera mengetahui letak kesalahan dari jawaban yang diberikan. Meskipun sejumlah penelitian terdahulu telah mengembangkan media asesmen digital berbasis Wordwall pada pembelajaran bahasa Arab, penelitian tersebut umumnya dilaksanakan di jenjang Madrasah Ibtidaiyah atau Tsanawiyah, sementara konteks pesantren berbasis perguruan tinggi dengan santri berlatar belakang multidisiplin non-bahasa Arab masih sangat jarang diteliti. Oleh karena itu, penelitian ini mengembangkan media asesmen interaktif berbasis Wordwall untuk pembelajaran nahwu di Lembaga Tinggi Pesantren Luhur Malang sekaligus mengetahui kelayakannya. Penelitian ini menggunakan pendekatan Research and Development (R&D) dengan model ADDIE. Data dikumpulkan melalui observasi, wawancara, kuesioner, dokumentasi, dan dianalisis secara kuantitatif dan kualitatif. Hasil penelitian menunjukkan bahwa media asesmen berbasis Wordwall dikatakan “sangat layak”, dengan persentase ahli materi 96%, ahli media 87%, ahli evaluasi 95% dan ahli praktisi 94%. Adapun respons santri menunjukkan kategori sangat positif dengan rata-rata keseluruhan 4,56 dan standar deviasi 0,58. Temuan ini memperluas cakupan pengembangan asesmen berbasis Wordwall ke jenjang pesantren perguruan tinggi multidisiplin yang sebelumnya belum banyak dikaji.

Kata kunci: *Media Asesmen Interaktif, Pembelajaran Nahwu, Pesantren, Wordwall, R&D*

ABSTRACT

Nahwu assessment in Islamic boarding schools generally still relies on conventional paper-based approaches that tend to be monotonous, resulting in a decline in students enthusiasm during examinations. Furthermore, the limitations of conventional assessment in providing immediate feedback prevent students from

promptly identifying errors in their answers. Although several previous studies have developed Wordwall-based digital assessment media for Arabic language learning, those studies were predominantly conducted at the Madrasah Ibtidaiyah or Tsanawiyah level, while the context of higher education-based pesantren with students from multidisciplinary non-Arabic backgrounds remains rarely studied. This study aims to develop interactive assessment media based on Wordwall for nahwu learning at Pesantren Luhur Malang Higher Education Institution and to determine its feasibility. The study employed a Research and Development (R&D) approach using the ADDIE model, involving four expert validators and tested on 17 female students of Madrasah Diniyah At-Tahdzibiyah classes C1 and C2. Validation results indicated a very feasible category from all four validators with percentages of 96% for content expert, 87% for media expert, 95% for evaluation expert, and 94% for practitioner expert. Student responses showed a very positive category with an overall mean score of 4.56 and standard deviation of 0.58, with the interactive and motivation aspect obtaining the highest score of 4.63. These findings extend the scope of Wordwall-based assessment development to the multidisciplinary Islamic boarding school (pesantren) higher education level, an area that has not previously been extensively studied.

Key words: Interactive Assessment Media, Nahwu Learning, Islamic Boarding School, Wordwall, R&D

مُلَخَّص

يعتمد تقييم تعلم النحو في المعاهد الإسلامية عمومًا على الأساليب التقليدية القائمة على الورق والتي تميل إلى الرتابة ، مما يؤثر سلبًا على حماس الطلاب أثناء أداء الامتحانات. فضلًا عن ذلك ، يعجز التقييم التقليدي عن تقديم التغذية الراجعة الفورية ، مما يجعل الطلاب غير قادرين على معرفة مواضع أخطائهم في الحال. وعلى الرغم من أن عددًا من الدراسات السابقة قد طوّرت وسائل تقييم رقمية قائمة على منصة Wordwall في تعلم اللغة العربية ، إلا أن تلك الدراسات أُجريت في الغالب على مستوى المدرسة الابتدائية أو المتوسطة ، في حين يظل سياق المعاهد الإسلامية المرتبطة بمؤسسات التعليم العالي والتي يضم طلابها خلفيات متعددة التخصصات من غير تخصص اللغة العربية نادر البحث والدراسة. تهدف هذه الدراسة إلى تطوير وسائل التقييم التفاعلي المعتمدة على منصة Wordwall لتعلم النحو في مؤسسة المعهد العالي لهور مالانج ، والتحقق من مدى صلاحيتها. يعتمد البحث على منهج البحث والتطوير (R&D) بنموذج ADDIE ، وشمل أربعة محكمين متخصصين ، وطُبّق على ١٧ طالبة من المدرسة الدينية التحضيرية الفصلين (ج١) و(ج٢). أظهرت نتائج التحكيم تصنيف "صالح جدًا" من جميع المحكمين ، بنسب بلغت ٩٦٪ لمحكم المحتوى ، و ٨٧٪ لمحكم الوسائط ، و ٩٥٪ لمحكم التقييم ،

و٩٤٪ للمحكّم الميداني. وأشارت استجابات الطالبات إلى تصنيف إيجابي جدًّا بمتوسط إجمالي ٤,٥٦ وانحراف معياري ٠,٥٨، إذ حصل جانب التفاعل والتحفيز على أعلى درجة بمقدار ٤,٦٣. توسّع هذه النتائج نطاق تطوير أدوات التقييم القائمة على منصة "Wordwall" ليشمل مستوى التعليم العالي في المدارس الداخلية الإسلامية (البيسانترين) متعددة التخصصات، وهو مجال لم يحظَ بدراسة مستفيضة من قبل

الكلمات المفتاحية: وسائل التقييم التفاعلي ، تعلم النحو ، المعهد الييني الاسلامي ، R&D ,Wordwall

INTRODUCTION

Nahwu is a familiar term and an important study for students pursuing their education at Islamic boarding schools. Without a sufficient understanding of the rules of nahwu, students will struggle to read and comprehend Arabic texts—whether from classical Islamic texts, the Qur'an, or the hadith (Mannan, A. & Hidayah, M., 2022). However, nahwu is often perceived as a difficult, complex, and intimidating subject. The notion that nahwu is difficult and intimidating is widely accepted, even among students who have been studying at Islamic boarding schools for a long time. More than just a perception, this view ultimately becomes a real psychological barrier that leads to a decline in students' interest in studying it further (Reonaldi et al., 2023).

The above issue is compounded by classroom learning conditions that are relatively unengaging and lack interactivity. Based on the researcher's observations, nahwu teaching and learning activities at the pesantren tend to be one-sided and lack variety, resulting in students not actively engaging in the process. In fact, students' active engagement is one of the primary indicators of learning effectiveness (Rohmawati, 2017). In addition to student engagement, the use of media also plays a crucial role in determining the transfer of knowledge from the instructor to the students (Zahrani, 2023). The researcher concludes that as long as students merely act as passive listeners without the support of engaging and interactive media, the teaching and learning activities will feel tedious and uninteresting, and the knowledge students acquire will be easily forgotten.

Researchers also found the same problem in the most critical part of the learning process—namely, the nahwu assessment activities at Pesantren Luhur Malang—which still rely entirely on conventional assessments in the form of paper-based test sheets completed in writing. Paper-based assessments have been shown to have negative effects, ranging from a decline in students' enthusiasm to limited opportunities for immediate feedback (Sa'idah et al., 2024). Yet, according to the "Assessment for Learning" theory by Black & William (1998), an assessment can be considered effective only when it provides immediate feedback to improve learning.

Given these issues, the researcher views the Wordwall platform as a relevant alternative for use in assessing nahwu learning. Wordwall is a web-based digital platform

that allows teachers to design various interactive assessment activities on their own or by utilizing activities already designed by other teachers in the community (Khairunnisa, 2024). The researcher believes that implementing this type of medium not only modernizes previous assessment methods but also serves as an engaging assessment tool that boosts students' enthusiasm.

Several previous studies also support the relevance of developing this medium, including a study by Zulfa (2023), who developed a Wordwall-based Arabic language assessment tool at a MIN using the ADDIE model and achieved an "excellent" feasibility rating, with 93.5% subject-matter expert validation and an 85% student response rate. However, her study still focused on Arabic in general, so it did not specifically address nahwu competencies. Another study by Sa'idah et al. (2024) developed an interactive Wordwall-based Arabic language assessment instrument for elementary school students that was proven to be statistically valid and reliable; however, this study focused on the assessment of general Arabic vocabulary at the elementary level and did not target grammatical competencies such as nahwu, which require an understanding of more complex sentence structures. Meanwhile, a study by Asysyifa et al. (2025) confirms that digital platforms as assessment tools have been shown to create a more positive and memorable evaluation experience however, the study's subjects were still limited to elementary-level students with relatively homogeneous academic backgrounds.

The studies cited above appear to have reached the same conclusion—namely, that the superiority of digital assessment over conventional assessment has been consistently demonstrated—but all were conducted at the MI or Mts levels with students who had relatively homogeneous Arabic language backgrounds. This differs from the context of the present study, in which the subjects are students from a university-affiliated Islamic boarding school with multidisciplinary, non-Arabic language backgrounds. This study aims to fill a gap in the literature by developing a Wordwall-based nahwu assessment for students at a different educational level and with characteristics distinct from those in previous studies, while also illustrating how digital assessments can be adapted for students with diverse levels of Arabic proficiency.

METHOD

This study employs a Research & Development (R&D) approach using the ADDIE development model (Analyze, Design, Develop, Implement, and Evaluate), as referenced in Branch (2009). The researcher chose the ADDIE model over other models, such as Borg & Gall or 4D, for several reasons. The application of the Borg & Gall model is relatively complex and requires significant time and resources to implement, as it consists of ten stages ranging from initial research and information gathering to dissemination and implementation. Furthermore, the generalizability of research findings from the application of the Borg & Gall model remains limited, as the studies were conducted within specific scopes and contexts (Maydiantoro in Muthoharoh & Marmoah, 2025). Furthermore, the 4D model developed by Thiagarajan and Semmel is considered less flexible for the development of digital platform-based products such as interactive assessment media. Moreover, the 4D model is limited to testing the feasibility of the media without an evaluation stage to measure the quality of the tested product

(Zamsiswaya et al., 2024).

Different from those two models, the ADDIE model has a general yet systematic and flexible structure for developing various types of products (Branch, 2009). Furthermore, it was chosen for this study because of its alignment with the research objectives, namely to produce an interactive assessment media product based on Wordwall that is appropriate in terms of both content and appearance. The ADDIE model also allows for continuous evaluation and revision at each stage, making it more efficient to apply to single-product development research with time constraints compared to the more complex Borg & Gall model or the less flexible 4D model.

This study was conducted in Classes C1 and C2 of the At-Taahdzibiyyah Female Madrasah Diniyah At-Taahdzibiyyah at the Luhur Islamic Boarding School in Malang from November 2025 to February 2026. The research subjects were 17 female students enrolled in various non-Arabic degree programs who were taking the nahwu course as part of the Madrasah Diniyah At-Taahdzibiyyah curriculum. Meanwhile, the research object was an interactive Wordwall-based assessment tool developed using the ADDIE model. The development procedure comprised five stages. First, the analysis stage: the researcher conducted direct observations and interviews with teachers and students to identify problems during the nahwu learning process, including the fact that assessments were still conventional in nature. Second, the design stage: the researcher, together with the teachers, determined the assessment material, developed a question outline based on Bloom's Taxonomy—ranging from Lower-Order Thinking Skills (LOTS) to Higher-Order Thinking Skills (HOTS)—and selected Wordwall features appropriate for the characteristics of the Nahwu material. Third, the development stage: the assessment media product was created and subsequently validated by four expert validators—a subject matter expert, a media expert, an evaluation expert, and a practitioner. Fourth, the implementation stage: the product was directly applied to 17 students during the even-semester final exam for the nahwu course. Fifth, the evaluation stage: formative evaluation was conducted throughout the development process, and summative evaluation was conducted after the product had gone through all revision stages.

Data collection in this study utilized several techniques, namely interviews, observation, questionnaires, and documentation. The instruments used included interview guidelines, questionnaire forms for the four validators, and responses from the students, which consisted of closed-ended Likert-scale questionnaires and open-ended questionnaires. Data analysis employed both qualitative and quantitative approaches. Qualitative data were obtained from interviews, observations, and input from validation experts, while quantitative data were analyzed using a feasibility percentage formula adapted from Arikunto in Inayah (2024) as follows:

$$\text{Feasibility percentage} = \frac{\text{Total score obtained}}{\text{Maximum total score}} \times 100\%$$

Next, the percentages obtained are interpreted into feasibility categories based on Riduwan (2015), according to the following table:

Tabel 1. Feasibility Categories

Score Range	Qualifications	Explanation
$81\% \leq \text{score} \leq 100\%$	Very Valid	Highly qualified, with/without revision
$61\% \leq \text{score} \leq 80\%$	Valid	Acceptable with minor revision
$41\% \leq \text{score} \leq 60\%$	Fairly Valid	Less acceptable with revision
$21\% \leq \text{score} \leq 40\%$	Less Valid	Unacceptable, revise
$0\% \leq \text{score} \leq 20\%$	Invalid	Totally unacceptable, revise

The product eligibility criteria stipulate that a product is deemed eligible if it achieves a minimum percentage of 61%. The data on the students' responses were analyzed using descriptive statistics with the aid of IBM SPSS Statistics software, including calculations of the mean, standard deviation, and minimum and maximum values for each evaluation aspect.

RESULTS AND DISCUSSION

1. Procedures for Developing Assessment Materials

The procedures for developing Wordwall-based interactive assessment media for teaching nahwu consist of the following five procedures:

a. Analysis Stage

In this stage, the researcher conducted a needs analysis aimed at obtaining data on learning issues gathered through observations and interviews with teachers and female students in classes C1 and C2 at Madrasah Diniyah At-Tahdzibiyah at Pesantren Luhur Malang. The following is a description of the results of each data set obtained:

1) Results of the Learning Observation

The observation results show that, in terms of learning media, the teacher was found to use only conventional learning media such as a chalkboard and markers. Meanwhile, in terms of the students, the students showed little enthusiasm for listening to the teacher's explanations. In addition, the students were found to be more interested in chatting with friends about topics unrelated to the lesson. At the end of the lesson, when the teacher posed questions, assigned tasks, or reviewed the day's material, the students appeared bored and unmotivated. The researcher also noted a lack of utilization of educational technology at this Madin that could support the learning process, such as the availability of Wi-Fi on the Madin premises and LCD projectors. Furthermore, each student owns and is permitted to bring personal devices such as cell phones and laptops.

2) Results of Interviews with Teachers

Interviews with teachers revealed that Nahwu instruction at the Madin remains entirely conventional, both in the learning process and in the administration of assessments. The teaching aids used by teachers in classroom activities consist of a chalkboard and markers. Meanwhile, during assessments, teachers do not use interactive tools. Assessments are conducted by the teacher distributing test questions in the form of multiple-choice and essay questions on

a test sheet that also serves as the answer sheet for the students. In an interview with the researcher, the teacher mentioned the challenges they face, noting that students still struggle to determine the i'rab of a word in a sentence—a topic that is crucial for students in reading and understanding classical Islamic texts.

3) Results of Interviews with Students

The results of the interviews with students indicated that, in terms of teaching media, the lessons were considered uninteresting or monotonous. Additionally, three out of four students interviewed stated that because exam results were not immediately distributed, they were unaware of their mistakes and the correct answers to the questions they answered incorrectly; they also expressed concern that the time limit on each question made it difficult for them to focus while working on the exam.

The analysis based on observations and interviews identified three main problems. First, the nahwu learning process is one-sided and lacks variety, causing students to become bored quickly. Instructors rely solely on conventional teaching aids such as the blackboard. Second, assessments are still entirely paper-based. Third, students do not receive immediate feedback after completing the questions, so they cannot identify the errors in the answers they have submitted. These findings align with research by Inayah (2024), who found that students feel bored because the questions are presented on paper, as well as the views of Pakudu (2024), who emphasizes the importance of providing immediate feedback to strengthen students' understanding. Furthermore, it was found that students are already familiar with using cell phones for daily activities but have never used them for learning assessments, and that the availability of Wi-Fi and LCD projectors at Madrash Diniyah At-Tahdzibiyyah supports the implementation of digital media.

b. Design Stage

1) Selection of Assesment Materials

The material to be included in the media consists of nahwu material based on the book *Mukhtasor Jiddan Syarah Al-Jurumiyah* by Asy-Syaikh As-Sayyid Ahmad Zaini Dahlan. This book was chosen as the primary reference by the researcher because it is used in the daily teaching of nahwu in classes C1 and C2 at the female Madrash Diniyah At-Tahdzibiyyah. In addition to this book, the researcher utilized various other sources as supplementary materials, both in print and online, including *Kawakibud Durriyah* by As-Syaikh Muhammad Al-Ahdal, *Matan Al Jurumiyyah*, *Amtsilah Tashrifiyah*, and *Al Miftah Lil Ulum* by Ustad Ahmad Qusyairi Ismail. The selection of nahwu material was determined through discussions between the researcher and the teachers. The final material included in the assessment tool covers seven chapters: I'rab Jar, I'rab Jazm, Marfu'atul Asma, Al Mu'rabats and Af'al, Fa'il, and Naibul Fa'il.

2) Determining Game Models and Interactive Features

The selection of game models is tailored to the cognitive difficulty level of the questions or cognitive levels based on Bloom's Taxonomy, as well as the characteristics of each nahwu question. Specifically, game models with dominant

game elements are suitable for LOTS questions, while games in a formal quiz format are suitable for HOTS questions, along with the type of interaction required to answer the questions. Based on the above criteria, the researchers decided to use the following interactive game models:

a) Maze Chase

This game model was selected for questions with LOTS cognitive levels C1–C3 (Remembering, Understanding and Applying). Questions with LOTS cognitive levels were used for the Maze Chase model because this game model features more prominent game elements. The presence of a chase element within the maze creates a fun gaming atmosphere, allowing students to answer basic questions while playing the game without feeling pressured.

b) Flying Fruits

This model was selected for LOTS cognitive level questions ranging from C1 to C3 (Remembering, Understanding and Applying). The mechanism involves answering questions while “catching” bubbles. The visualization of bubbles moving from bottom to top creates an engaging interaction, suitable for LOTS-level questions that do not require high concentration to answer.

c) Gameshow Quiz

This game model was chosen for questions at the LOTS cognitive level C3 (Applying) and the HOTS cognitive levels C4–C5 (Analyzing and Evaluating), as the increasing difficulty of the questions requires students’ full focus while working on them. The formal quiz format with engaging themes helps students concentrate fully on questions that demand higher-order thinking. Additional features, such as a bonus round, make answering the questions more enjoyable.

d) Pair or No Pair

This game model was specifically chosen for questions at the C4 (Analyzing) cognitive level, which require the ability to pair or match questions with the correct answers. The “Pair or No Pair” format makes it easier for students to match the i’rab of words based on their position and the applicable grammatical rules.

In addition to determining the types of game models, the researchers also identified interactive features for the development of the assessment tool. The first feature involved removing the timer from each game model, based on the results of the previous needs analysis. The second feature is the inclusion of feedback for each question, so that students know whether their answer to each question is correct or incorrect. The third feature is a scoreboard or leaderboard, which can boost motivation, enthusiasm, and a spirit of healthy competition among the students. The fourth feature is the inclusion of a soundtrack in each game model.

3) Visual Design Planning for Assessment Media

The following is an outline of the distribution of visual styles in the game within the assessment media:

Table 2. Visual Styel Distribution Outline

Game Model	Theme of the Game (<i>Visual Style</i>)	Font Type	Additional Features	Layout of Questions and Answer Choices
Maze Chase	Spooky	Sans-serif	The presence of obstacles with varying levels of difficulty in this type of game, as well as the number of lives (heart lives) that can be adjusted.	The questions are located below, while the answer choices are above the questions in the form of a maze.
Flying Fruits	Video Game	Sans- Serif	The speed at which answer choices scroll by and the number of lives in the game (heart lives)	The question is positioned above. Meanwhile, the answer choices—depicted as fruits—are thrown from the bottom upward
Gameshow Quiz	Wild West	Sans- Serif	The bonus round and the number of lives in the game (heart lives)	The question is positioned below. Meanwhile, the answer choices are positioned above the question
Pair or No Pair	Detective	Sans- Serif	-	The question is aligned with the answer choices

The choice of different themes for each model is intended to create a variety of visual presentations, so that the students do not get bored during each assessment session.

c. Development Stage

1) Media Production on the Wordwall Platform

The media designed by the researchers were developed using the Wordwall platform. The following are the technical steps for creating assessment media:

a) Wordwall Creating a Wordwall Account

The platform can be accessed online at <https://Wordwall.net>. Users who already have an account can click “Login.” Those who do not yet have an account can click “Sign-up.” These options are located in the upper-right

corner of the platform screen.

b) Creating a New Activity

In this step, the researcher begins by clicking “Create Activity” on the Wordwall dashboard to create a new activity. Each activity is designed for a specific set of questions using a particular game model.

c) Selecting a Game Template

The selection of a game template is based on the design created in the previous step. The researcher selects the appropriate game model for each cognitive level, such as Maze Chase, Flying Fruits, Gameshow Quiz, and Pair or No Pair.

d) Entering Question Content

Each question is manually entered into the template using the “Question” column for the question and the “Answer” column for the answer choices.

e) Customizing Themes and Designs

Here is what each game model looks like after being customized according to the previous design:

Maze Chase	Flying Fruit	Gameshow Quiz	Pair or No Pair
			

Figure 1. Game Model View

f) Game Settings

The researchers ensured that each activity had the same settings. The first setting was “random order,” in which the questions in each activity were arranged randomly. As a result, each student worked on the questions in a different order. Below is a screenshot of the random question order setting. The second setting was a restriction on retakes (start again), so that students were only allowed to attempt each question once, since the assessment tool was used for the Even-Semester Final Exam, which is summative in nature.

g) Preview dan Testing

After creation was complete, the researcher conducted a preview to ensure that each question was properly placed within the game model, that the questions and answer choices were clearly legible in both Indonesian and Arabic, that the correct answer options were accurate, and that there were no errors or issues during the question-taking process. Once the activity was ready, Wordwall automatically generated a URL link and a QR code for direct access.

2) Validation by Experts

At this stage, the researchers conducted a feasibility validation of the product involving a number of experts. The validation of the assessment media

was carried out by expert validators, including subject matter experts, media experts, evaluation experts, and practitioners. Validation is carried out by completing an evaluation questionnaire containing indicators related to the develop Validation by Experts In this stage, the researcher conducts a feasibility validation of the product involving a number of experts. The validation of the assessment media is carried out by expert validators consisting of subject matter experts, media experts, evaluation experts, and practitioners. Additionally, the questionnaire included a section for feedback and suggestions. Through this feedback section, if the product received input or suggestions, the researchers would revise it to optimize its effectiveness.

The researchers received several suggestions for improvement. Based on the feedback and suggestions from the experts, the researchers made the following revisions:

Table 3. Results and Corrective Actions Validator Expert Recommendations

Validator	Expert Input	Follow-up on Revisions
Material Expert	Foreign words and Arabic terms are written in italics.	Corrections to the spelling of foreign words and Arabic terms are now in italics as follows: Ya' serves as the preposition <i>jar</i> for <i>asmaul khamsah</i>
	Providing example sentences before the question.	Adding example sentences before the question. The original sentence structure is as follows: وَضَعْتُ الْكِتَابَ عَلَى الْمَكْتَبَةِ It becomes as follows: ذَهَبْتُ فَاطِمَةُ إِلَى الْفَصْلِ ثُمَّ وَضَعْتُ الْكِتَابَ عَلَى الْمَكْتَبَةِ
	Placement of imperative sentences above the question or out of alignment.	Correction for the imperative sentence placed above as follows: Perbaiki <i>jumlah</i> ini agar benar dan tepat! لَمْ يَذْهَبُوا إِلَى السُّوقِ
Media Expert	Enlarging the small text for answer choices in the Gameshow Quiz game model.	Correcting the formatting of answer choices in the Gameshow Quiz game model. The original format was as follows:  The answer choices, which originally appeared small and

		spanned two lines, have been enlarged as follows: 
	The Arabic answer options in the Maze Chase game model must be replaced because the system does not support Arabic words combined with Indonesian words.	Corrections to the answer options in the Maze Chase game model, where the sentences are a combination of Arabic and Indonesian words, with screenshots in Word or PDF files.
Evaluation Expert	The language used in sentence structures was clarified to avoid ambiguity for the students.	Clarified the language used in sentence structures so that the questions would not be ambiguous.
Practitioner	Adjusted the difficulty level and number of questions to suit the students	The difficulty level of the questions was adjusted again to match the students' abilities, and the number of questions was reduced from 65 to 35.

As a whole, these revisions have resulted in assessment tools that are more valid in terms of content and presentation, and better suited to the characteristics and abilities of the students as users.

d. Tahap Implementation Stage

The implementation of the Wordwall-based interactive assessment tool took place on January 20, 2026, at Madrasah Diniyah At-Tahdzihiyyah Pesantren Luhur Malang from 8:00 p.m. to 9:00 p.m. WIB. The subjects of the implementation were female students in classes C1 and C2, totaling 17 students. A follow-up exam was scheduled for students who were unable to attend on January 26, 2026.

The researcher coordinated with the instructors regarding the preparation of equipment prior to implementation. Each student was required to bring their own electronic device. The researcher recommended bringing a laptop to maximize the students' ability to access the assessment media. This was also to prevent cheating, as smartphones or tablets are more susceptible to being accessed by exam proctors and the researcher. Next, the distribution of access links to the students was accompanied by an orientation regarding the procedure and guidelines for completing the assessment.

During the assessment, the researchers did not encounter any violations or instances of cheating by the students because the order of the questions was randomized, and supervision was provided by both the researchers and the

teachers.

e. Evaluation Stage

Evaluation is conducted formatively throughout the development process and summatively through the collection of student response data using Google Forms questionnaires, which are completed immediately after the assessment is finished. The student response data yield quantitative data from Likert-scale questionnaires and qualitative data from open-ended questionnaires, which are then analyzed using descriptive statistics with the aid of SPSS.

2. Results of the Assessment Media Development

The product resulting from this development research is an interactive assessment tool based on the Wordwall platform for teaching Nahwu at the Madrasah Diniyah Putri Pesantren Luhur. The tool can be accessed via various devices with an internet connection. It consists of four game modes containing 35 multiple-choice and matching questions covering six topics in Nahwu. Wordwall can be accessed via the following links for each game model:

- a) Flying Fruits game model: <https://wordwall.net/play/105484/754/794>
- b) Maze Chase game model: <https://wordwall.net/play/105485/693/395>
- c) Gameshow Quiz game model: <https://wordwall.net/play/105486/671/813>
- d) Pair or No Pair game model: <https://wordwall.net/play/105488/707/812>

Wordwall was chosen among many similar platforms such as Kahoot, Quiziz, and Quizlet because it offers a much wider variety of game models and is easily accessible without requiring students to create an account. Furthermore, in the context of nahwu instruction, Wordwall is considered more suitable than other platforms because it offers activities such as grouping, matching, and others that are not limited to multiple-choice formats (Khairunnisa, 2024). The appropriateness of this format is crucial for the quality of the assessment itself, as the alignment between the question format and the competencies to be achieved must be appropriate. Students' ability to determine i'rab essentially requires them to match the function of a word with the applicable grammatical rules; thus, the matching format in the "Pair or No Pair" model is better suited to measuring this competency more accurately than the multiple-choice format alone offered by other platforms. Furthermore, the availability of feedback on every question within the Wordwall platform allows the assessment to function not only as a tool for measuring learning outcomes but also as an integral part of the learning process itself.

a. Technical Features of the Development Tool

Wordwall-based interactive assessment tool developed here is equipped with four interactive features designed based on the results of the needs analysis of the students conducted in the previous phase, as follows:

1) Real-Time Feedback

This feature automatically displays feedback after students answer each question. Through this feature, students can determine whether their chosen answer is correct or incorrect, while also seeing the correct answer for any question they answered incorrectly. This feature is a direct implementation of the Assessment for Learning (AFL) principle proposed by Black & Wiliam

(1998), which states that effective assessment must provide feedback as soon as possible to encourage improvement. Unlike conventional assessments, which require students to wait a long time to find out their test results, this feature allows students to immediately learn from the mistakes they made while answering questions. This aligns with Prensky's (2001) view that immediate feedback enables learners to know right away whether their actions were successful or not within a context that is still relevant.

2) Leaderboard

This feature displays a leaderboard after each game module is completed. The leaderboard serves as a positive competitive motivator among students as they complete the Nahwu assessments.

3) Summary of Answer Results

This feature displays a summary of the results at the end of each activity or game module. Through this feature, students can view a list of question numbers along with their correct or incorrect status, allowing them to self-evaluate and identify questions that need further review.

4) Random Question Order

This feature is enabled so that each student receives a different sequence of questions, thereby preventing cheating during the assessment.

b. Product View

This assessment tool consists of four game modes to provide variety and reduce boredom during the assessment. The product interface presented in this section is the final version, which differs in several ways from the initial design concept, particularly in the selection of visual themes for each game model—a decision based on the researcher's own considerations following direct testing of the product. Below are the view for the four game models:

1) Maze Chase

This game features a maze-style gameplay model in which students move their characters toward the correct answer while avoiding enemies. This model was chosen for questions at the LOTS cognitive levels (C1–C3) because the dominant game elements create a fun atmosphere, allowing students to answer basic questions without feeling pressured. This model uses a "Video Game" theme with a predominance of bright colors and the Sans-Serif font for Indonesian text, along with the Sakkal Majala font for Arabic text. The researchers chose the "Video Game" theme for this game model because it features the clearest visual representation of players, game obstacles, and enemy characters compared to other themes. Below is a view of the Maze Chase game model:



Figure 2. View of the Maze Chase Game Model

2) Flying Fruit

This is a game where students select the correct answer from a set of options that move from bottom to top. This model was chosen for LOTS cognitive level questions (C1–C3) because the moving visuals create engaging interaction without requiring excessive concentration to answer the questions. This model uses an “Underwater” theme with a predominance of refreshing blue colors that are easy on the eyes. The Underwater theme was chosen because the answer options—which appear as bubbles—are larger and clearer compared to those in other themes. Below is a view of the Flying Fruit game model:



Figure 3. View of the Flying Fruit Game Model

3) Gameshow Quiz

This game model is a multiple-choice quiz featuring a bonus round and the option to double the score. It was chosen for cognitive level questions ranging from LOTS C3 to HOTS C4–C5 because the formal quiz format helps students concentrate fully on questions requiring higher-order thinking. This model uses a “Space” theme with a dark color scheme that supports students’ focus while working on the questions.



Figure 4. View of the Game Show Quiz Game Model

4) Pair or No Pair

This game model involves a matching activity where students choose whether two cards displayed side by side match or not. This model was specifically chosen for C4-level cognitive questions that require analytical skills, as the side-by-side pairing format makes it easier for students to compare and analyze the relationship between words and their positions in a sentence, as well as to apply i'rab. This model uses a “Dinosaur” theme with a lighter brown color scheme compared to the previous model



Figure 5. View of the Pair or No Pair Game Model

4. Feasibility of the Assessment Media Development Product

a. Expert Validation Results

1) Material Expert

The material expert for this product development is Mr. Moh. Fauzan, S.Pd., M.Pd.I., a lecturer in Arabic Language Education at the Faculty of Letters, Malang State University (UM), who has experience and expertise in teaching Arabic grammar (nahwu). The following are the results of the validation conducted by the subject matter expert:

Table 4. Results of Material Expert Validation

No	Assessment Indicator	Score
Curriculum Compatibility Aspect		
1	Assessment questions according to Core Competencies (KI), Basic Competencies (KD), Achievement Indicators (IP), and Learning Objectives (TP)	5
2	The material questions are in line with the nahwu book being studied	5
Aspect of Arabic Language Accuracy in Questions		
3	Arabic sentences in the nahwu questions conform to the grammar rules	5
4	There are no errors in the writing of the Hijaiyah letters and harakat	4
5	Nahwu terms are written accurately and consistently	4
6	No mistakes in i'rab in the example sentences	5
7	The answer key provided is correct and consistent with established rules	5
8	Questions are clearly formulated	5
Aspect of Content Coverage		
9	Questions cover understanding from the basics to the application of grammar rules	5
10	The level of depth in the material aligns with the learning objective	5

Based on the questionnaire results from subject matter experts, the Wordwall-based interactive assessment tool received a score of 48 out of 50, representing 96%, and was categorized as "highly valid" or "highly suitable."

2) Media Expert

The media expert in this study is Mr. Moh. Fery Fauzi, S.Pd., M.Pd.I., a lecturer in Arabic Language Education at the Faculty of Letters, Malang State University (UM), who has experience and expertise in teaching in the field of instructional media (wasail tadris). The following are the validation results conducted by the subject matter expert:

Table 5. Results of Media Expert Validation

No	Assessment Indicator	Score
Appearance and Aesthetics Aspects		
1	Font size and type are easy to read	3
2	The visual design of the Wordwall assessment tool is attractive and does not distract the user's focus	4
Usability Aspects		
3	The Wordwall tool is easily accessible using various devices	5
4	The Wordwall tool is efficient and practical to use as an assessment tool compared to traditional written tests	4
5	The access link is easy for students to share and access	5
Functionality and Interactivity Aspects		
6	Wordwall functions well (no bugs or errors) during operation.	5
7	The platform provides instant feedback in the form of scores or correct/incorrect answers.	5
8	The selected game features are well-suited for Wordwall	5
Media Benefits Aspect		
9	The platform facilitates the Nahwu learning assessment process	3
10	The platform makes the assessment process more engaging and less tedious	4
11	It saves time in the assessment process compared to	5

Based on the questionnaire results from media experts, the Wordwall-based interactive assessment tool received a score of 48 out of 55, representing 87%, and was categorized as "highly valid" or "highly suitable." The media can be considered interactive, making learning more engaging. This is in line with research by Ma'arif et al. (2025), which states that the use of interactive features and elements increases student engagement in learning that is enjoyable and not tedious.

3) Evaluation Expert

The evaluation expert for this study was Dr. Nurhidayati, M.Pd, a lecturer in Arabic Language Education at the Faculty of Letters, Malang State University (UM), who has experience teaching in the field of curriculum development and specializes in the development of Core Competencies (KI), Basic Competencies (KD), and Learning Outcomes (IP TP), as well as the analysis of Bloom's Taxonomy and cognitive levels. The results of the validation conducted by the evaluation expert are as follows:

Table 6. Results of the Evaluation Experts Validation

No	Assessment Indicator	Score
Aspects of Assessment Instrument Construction		
1	Alignment of questions with Core Competencies (KI), Basic Competencies (KD), Achievement Indicators (IP), and Learning Objectives (TP)	5
2	Alignment of test items with the subject matter	5
3	Alignment of test items with cognitive levels	5
Linguistic Aspects		
4	The questions do not lead to multiple interpretations (ambiguity)	5
5	The language used is easy to understand	4
6	Proper use of grammatical terms in accordance with the rules	4
Assessment Display Aspects		
7	Test items align with the answer choices	5
8	Test items align with Bloom's taxonomy levels, ranging from Lower-Order Thinking Skills (LOTS) to Higher-Order Thinking Skills (HOTS)	5

Based on the questionnaire results from the evaluation experts, the Wordwall-based interactive assessment tool received a score of 38 out of 40, representing a 95% score, and was categorized as "highly valid" or "highly suitable."

4) Practitioner

The expert practitioner in this study is Ms. Lutfi Handayani, S.Si, a teacher of nahwu at Maadin At-Tahdzibiyyah Pesantren Luhur in Malang, who will assess the practicality of the product's implementation. The following are the results of the validation conducted by the evaluation expert:

Tabel 7. Practitioner Validation Results

No	Assessment Indicator	Score
Nahwu Content Aspects		
1	Questions cover basic understanding through to the application of nahwu grammar rules	5
2	The nahwu content in the questions is accurate and conforms to the grammar rules	5
3	The question content aligns with the lesson plan and the nahwu textbook being studied	4
Visual Presentation and Design Aspects		
4	The visual presentation of the Wordwall media is engaging	5

	for students		
5	The Wordwall templates used are varied (not monotonous) and not boring		5
6	The design does not distract students from focusing on the questions		4
7	The questions and answer choices are clearly displayed		5
	Linguistic Aspects		
8	The Arabic text, including vowel marks, is clear and accurate		5
9	The language used in the questions is easy to understand		5
10	The sentence structure in the questions is easy to understand		4
	Usability Aspects		
11	Ease of access to the platform via a link or QR code		4
12	The platform runs smoothly during use (no lag or errors)		5
13	Compatibility of the media with facilities available at Madrash Diniyah At-Tahdzibiyyah		5

Based on the results of the practitioner questionnaire, the Wordwall-based interactive assessment media received a score of 61 out of 65, representing a percentage of 94%, and was categorized as “highly valid” or “highly suitable.”

c. Results Students Responses

1) Results Students Responses to the Media in the Closed-Ended Questionnaire

Data on students' responses were obtained from questionnaires completed by 17 students in classes C1 and C2 after using the Wordwall-based interactive assessment tool. The questionnaire consisted of 21 statements covering five aspects: appearance and design, ease of use, interactivity and motivation, grammar question content, and the usefulness of the tool, using a 1–5 Likert scale ranging from “strongly disagree” to “strongly agree.” The collected data were analyzed using descriptive statistics with the aid of SPSS 25 software as follows:

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Aspek1	17	2.75	5.00	4.4853	.74199
Aspek2	17	3.33	5.00	4.5882	.57166
Aspek3	17	3.17	5.00	4.6373	.57202
Aspek4	17	3.00	5.00	4.4941	.64077
Aspek5	17	3.00	5.00	4.6078	.63722
Total	17	3.19	5.00	4.5630	.58132
Valid N (listwise)	17				

Figure 5. Students' Response Result

The research results indicate that the Wordwall-based interactive

assessment tool received a very positive response from the students, with an average score of 4.56. Based on Riduwan's (2015) criteria for interpreting adaptation scores, a score of 4.56 falls within the range of 4.21–5.00, corresponding to the "Very Positive" category. These positive results can be explained by the research conducted by Aini et al. (2023), which indicates the need for teaching methods that incorporate online games and modify them to motivate students to participate in learning.

The interactive and motivational aspects received the highest scores, with an average of 4.63 and a standard deviation of 0.57 among all assessed aspects. High scores in these aspects indicate the success of the interactive gamification elements in the medium. This aligns with Prensky's view (as cited in Na'im & Utaminingsih, 2025), that incorporating game elements into learning activities can increase student engagement and interest. In the context of this study, these elements were successfully implemented through Wordwall features in the form of game-based models that reduced stress and boredom.

2) Respons Students Responses to the Media in the Open-Ended Questionnaire

The open-ended questionnaire consisted of three questions regarding the strengths of the media, its weaknesses, and suggestions for improvement, which were completed by 17 students from Madrasah Diniyah classes C1 and C2 after using the media. The data obtained were analyzed using qualitative descriptive methods by identifying the dominant responses across the three aspects of the questions asked. Regarding the strengths of the media, the responses from the 17 students converged on the following three points:

- a) The media made working on the nahwu assessments more enjoyable and less tedious, as expressed by Respondent 1: "Working on nahwu questions became more exciting and easier."
- b) The media successfully reduced students anxiety when taking assessments, as stated by Respondent 6: "The exam felt more exciting and less stressful, especially for nahwu lessons."
- c) The variety of game formats increased students interest in working on the questions, as stated by Respondent 13: "The variety of game types made me interested in working on the questions."

These findings are consistent with the average scores for the interactivity and motivation aspects, which received the highest scores among the other aspects—4.63 with a standard deviation of 0.57.

Regarding the media's shortcomings, the students' responses focused on the following four points:

- a) The students were satisfied with the media, so they did not perceive any shortcomings, as expressed by Respondent 1: "None."
- b) Some game models have the potential to distract students from answering

the questions, as stated by Respondent 8: “I got a bit distracted because I was focusing on the game instead of the questions, hehe.”

- c) The font size in some game models is considered too small, making it difficult to read, as stated by Respondent 7: “Some of the fonts are too small, making it hard to read.”
- d) Differences in feedback in the Maze Chase model. In the Maze Chase game model, feedback is displayed only when students correctly answer a question. This is as stated by Respondent 17: “For some parts of the questions, the error feedback doesn’t appear immediately.”

This finding is consistent with the score for the appearance and design aspect, which received the lowest score among the other aspects at 4.48. Regarding suggestions for improvement, the students’ responses focused on four points that align with the identified shortcomings, as follows:

- a) The absence of suggestions for improving the development tools, as stated by Respondent 8: “None.”
- b) Adjusting the speed of game elements so that students can focus more on the questions, as suggested by Respondent 11: “Slow down the passing bubbles and walking monsters because they distract from the questions and answers.”
- c) Increasing the font size in the game interface, as stated by Respondent 16: “Make the font size a little bigger.”
- d) Display the correct answer immediately when a student answers incorrectly, as suggested by Respondent 6: “When an answer is wrong, the correct one should be displayed right away.”

Regarding the font size adjustment, this was constrained by the technical limitations of the Wordwall platform, which cannot be fully customized; therefore, the implemented display represents the optimal result achievable without compromising readability or the question layout. This aligns with the principles of Mayer’s (2009) Cognitive Theory of Multimedia Learning, which emphasizes that visual elements in learning media—including text size—must be optimally designed so as not to interfere with users’ cognitive processing of questions or answers. Additionally, the Maze Chase game model displays feedback only when students answer a question correctly, not when they answer incorrectly. This is consistent with Prensky’s (2001) view that immediate feedback allows learners to know right away whether their actions were successful or not within a context that remains relevant, although in this context, the provision of feedback is limited within the Maze Chase game model by the mechanisms of the Wordwall platform [MY2.1] and is not entirely controllable by the researcher.

Nevertheless, overall, the students’ responses to the open-ended questionnaire indicate that the majority of students provided positive feedback on the Wordwall-based interactive assessment tool for Nahwu instruction, with a few suggestions for improvement.

CONCLUSION

Wordwall-based interactive assessment media for Nahwu learning at Madrasah Diniyah At-Tahdzibiyyah Pesantren Luhur Malang was developed through five stages of the ADDIE model systematically. The analysis phase identified that conventional paper-based assessments did not provide immediate feedback and were less enjoyable. The analysis led to the design of an assessment tool that encompassed seven Nahwu materials in four game models (Maze Chase, Flying Fruit, Gameshow Quiz, and Pair or No Pair). The product was then validated, implemented with 17 female students in grades C1 and C2, and evaluated based on user feedback.

The resulting product is a digital summative assessment tool based on the Wordwall platform, containing 35 multiple-choice and matching questions across seven Nahwu (Islamic grammar) topics (I'rab Jar, I'rab Jazm, Marfu'atul Asma', Al-Mu'rabats, Af'al, Fa'il, and Naibul Fa'il). It was declared highly feasible based on validation by four experts (material 96%, media 87%, evaluation 95%, practitioners 94%) and received a very positive response from students, with an average overall score of 4.56 (Very Positive category). The interactive and motivational aspects received the highest score (4.63), proving that the gamification element successfully created a fun and stress-free assessment experience.

The results of this study have several implications. Arabic language teachers can utilize this assessment tool as a more interactive alternative to conventional paper-based assessments for evaluating Nahwu learning. For learning media developers, the findings of this study demonstrate the importance of considering the technical limitations of gamification-based platforms like Wordwall, particularly regarding font size, feedback mechanisms that are not yet fully customizable for users, and the system's readability of Arabic text. Future researchers are advised to develop similar assessment media that can be applied to other subjects, such as Sharaf. Furthermore, different grade levels and research subjects with varying numbers should be studied, and the long-term impact of using gamification-based assessment media on student learning outcomes should be examined.

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