

Design and Validation of a JotForm-Based Arabic Language Assessment Model to Enhance Higher-Order Thinking Skills in Islamic Senior High Schools

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Abstract

Students' critical thinking skills in Arabic language learning at Madrasah Aliyah are still relatively low, as evidenced by researchers' observations, which show that students are still at the stage of understanding and applying the material they are learning. This is due to the assessment method still being the old method, namely paper-based evaluation. This research aimed to develop a JotForm-based evaluation tool and test its validity. This research uses the Research and Development method with the ADDIE research model: 1) Analysis, 2) Design, 3) Develop, 4) Implement, and 5) Evaluation, and the researcher only focuses on the ADD stage, namely 1) Analysis, 2) Design, and 3) Develop. In the analysis stage, the researcher went through three steps: needs analysis, curriculum analysis, and materials analysis. In the design stage, the researcher developed the evaluation tool product. The development stage then refined the design into an Arabic-language learning evaluation tool using the JotForm application. This Jotform tool was designed to improve and develop students' critical thinking skills. Based on the calculation, the material validation results obtained a score of 75%, which falls within the range of $62.5\% \geq - 81.5\%$, and can be classified as "valid and appropriate" for use and tested without review. At the same time, the media verifier results scored 87%, which falls within

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the range of $\geq 81.5\%$ - 100% and is classified as very valid and can be used with the reviews provided. The language verifier scored 81% , which falls within the range of $\geq 62.5\%$ - 81.5% and is classified as valid. Thus, Jotform is highly valid and well-suited as an evaluation tool that supports students' critical thinking skills.

Keywords: Jotform; Evaluation Tools; Language Assessment; Critical Thinking

Introduction

Critical thinking is reasonable and reflective thinking that focuses on deciding what to believe or do. John Dewey defined critical thinking as active, persistent, and careful consideration of a belief or form of knowledge based on supporting reasons and conclusions.¹ In the field of education, critical thinking encourages students to obtain, analyze, evaluate, internalize, and apply knowledge in solving problems.² In the 21st century, critical thinking is considered one of the essential skills that students must possess to face increasingly complex educational and social challenges.³ According to Tony Wagner, 21st-century learning emphasizes several important skills, including critical thinking, problem-solving, communication, collaboration, and creativity. Therefore, the learning process should not merely focus on memorization but also encourage students to analyze information, evaluate arguments, and produce creative solutions.⁴ Students with good critical thinking skills are more capable of understanding problems systematically and making appropriate decisions in various learning situations.

Critical thinking is a core 21st-century skill that enables students to analyze, evaluate, and create solutions rather than merely recall information. Despite its importance, assessments in Arabic language learning often remain at the lower cognitive levels of Bloom's taxonomy, focusing on memorization and basic comprehension. This condition limits students' ability to develop higher-order thinking skills (HOTS) needed for academic and real-world problem

¹ Ifa Zuhria, "Pengembangan Bahan Ajar Higher Order Thinking Skills (Hots) Berbasis Website Pada Subtema Pentingnya Makanan Sehat Bagi Tubuh Untuk Meningkatkan Berpikir Kritis Siswa Di Madrasah Ibtidaiyah Nabhdlatul Ulama' Kecamatan Wonosari Kabupaten Malang," 2021.

² Siti Rohaeni, "Pengembangan Sistem Pembelajaran Dalam Implementasi Kurikulum 2013 Menggunakan Model Addie Pada Anak Usia Dini," *Instruksional* 1, no. 2 (2020): 122, <https://doi.org/10.24853/instruksional.1.2.122-130>.

³ t Fakhrihal And Uswatun Hasanah, "Upaya Meningkatkan Kemampuan Berpikir Kritis Siswa Pada Mata Pelajaran Biologi Melalui Penerapan Model Pembelajaran Problem Based Learning Di Kelas X Sma Negeri 1 Kluet Tengah" 8, no. 2 (2020): 200–217, <https://doi.org/10.22373/biotik.v8i2.8222>; Noza Aflisia, "تطوير المواد التعليمية النحوية على أساس معرفة المحتوى التربوي التكنولوجي لتنمية مهارات التفكير العليا," لدى طلاب قسم تعليم اللغة العربية في جامعة جوروب الإسلامية الحكومية وجامعة قتماواتي سوكرنو الإسلامية الحكومية "بنجكولو" (UIN Sunan Gunung Djati Bandung, 2023), [https://digilib.uinsgd.ac.id/71137/..](https://digilib.uinsgd.ac.id/71137/)

⁴ Adhitya Rahardhian, "Kajian Kemampuan Berpikir Kritis (Critical Thinking Skill) Dari Sudut Pandang Filsafat" 5, no. 2 (2022): 87–94.

solving.⁵ Previous studies have developed digital tools for Arabic assessment, yet most rely on conventional multiple-choice formats that do not adequately measure analytical and evaluative abilities. Moreover, instructional design models such as ADDIE are widely referenced in the development of learning materials, but in practice, many studies adopt only the Analysis and Design phases without proceeding to Development, Implementation, and Evaluation. This partial implementation occurs due to time constraints, limited technical capacity, and a lack of accessible platforms for small-scale educators. Consequently, the potential of ADDIE to produce validated, iterative, and contextually relevant assessments remains underutilized.⁶ To address this gap, this study designs and validates a JotForm-based Arabic language assessment model specifically targeting HOTS. Unlike existing tools that focus on content delivery, the proposed model integrates formative feedback, automated scoring for open-ended responses, and alignment with Ennis's 12 critical thinking indicators. The novelty lies in three aspects:⁷ Contextual adaptation: The model is tailored for Arabic language learning at the secondary level in Indonesia. Accessibility: It utilizes JotForm, a low-cost, no-code platform feasible for teachers with limited IT resources. Full-cycle validation: The study implements all five phases of ADDIE, ensuring the assessment is not only designed but also developed, implemented, and evaluated empirically.

In addition, some studies only emphasized learning outcomes without deeply examining the indicators of students' critical thinking skills during the learning process. Therefore, research related to HOTS-based Arabic learning media remains important to be explored further.⁸ Arabic language learning often faces challenges related to students' low participation and limited critical thinking activities during classroom instruction. Learning activities tend to focus more on memorization and teacher-centered methods, causing students to become less active in analyzing and responding to learning materials critically.⁹ The novelty of this research lies in the integration of HOTS principles into Arabic language learning media while emphasizing students' critical thinking indicators in the

⁵ Riries Ernie Cynthia and Hotmaulina Sihotang, "Melangkah Bersama Di Era Digital : Pentingnya Literasi Digital Untuk Meningkatkan Kemampuan Berpikir Kritis Dan Kemampuan Pemecahan Masalah Peserta Didik" 7 (2023): 31712–23.

⁶ Robert H Ennis, "Critical Thinking Dispositions : Their Nature And Assessability" 18, No. 1996 (2011): 165–82.

⁷ Zakiah Linda and Ika Lestari, *Berpikir Kritis Dalam Konteks Pembelajaran, Erzqatama Karya Abadi*, 2019.

⁸ Maharani Kumalasani and Dian Aini, "Pengembangan Instrumen E-Test Sebagai Inovasi Penilaian Berbasis Online Di Sekolah Dasar" 5, no. November (2019): 155–69.

⁹ M. Pd Dr. Lailatul Qomariyah, M. Pdi Ariga Bahrodin, *Pengembangan Hubba's Adventure Arabiy Pada Pembelajaran Bahasa Arab Siberetik Bagi Siswa Madrasah Tingkat Dasar Jombang Di Era Society 5.0*, 2023.

learning process.¹⁰ Unlike previous studies that focused only on general HOTS implementation, this study specifically applies HOTS concepts in Arabic learning contexts to encourage students' analytical, evaluative, and creative thinking abilities.

This study uses the ADDIE development model consisting of Analysis, Design, Development, Implementation, and Evaluation stages. However, this research does not implement all stages comprehensively.¹¹ The implementation and large-scale evaluation stages were limited due to time constraints, research scope, and field conditions.¹² Therefore, this study mainly focuses on the analysis, design, and development stages to produce feasible HOTS-based Arabic learning media. A person needs to have critical thinking skills and needs to learn them, because these skills are very useful and are provisions for facing life now and in the future.¹³ With critical thinking skills, a person is able to think rationally and logically in receiving information and systematically in solving problems.¹⁴

Critical thinking is essential to enhance intellectual integrity and academic rigor in mastering knowledge and truth.¹⁵ Students need to be encouraged to think outside the box and explore their potential. This aims to equip students with the skills and knowledge necessary to thrive in the 21st century, focusing on three main pillars: Passion, Problem Solving, and Production.¹⁶

Students' critical thinking skills in Arabic language learning at Madrasah Aliyah Perguruan Muallimat Cukir Jombang are still relatively low, as indicated by the researcher's observations, which show that students are still at the stage of understanding and applying the material they are learning. This is due to the traditional learning method, namely lectures, and the assessment process using paper-based evaluation methods. To improve students' critical thinking skills, teachers with their professional competence must develop evaluation tools appropriate to students' characteristics and the technological developments of this era.

An evaluation tool is a tool that makes it easier for someone to carry out a task or achieve a goal effectively and efficiently. In learning strategies, an evaluation tool is a means used to measure students' understanding and abilities

¹⁰ Nahnu Robid Jiwandono, "Kemampuan Berpikir Kritis (Critical Thinking) Mahasiswa Semester 4 (Empat) Pada Mata Kuliah Psikolinguistik" 4 (2019).

¹¹ Susan M Brookhart, *How To Assess Higher Order Thinking Skills In Your Classroom*, 2010.

¹² R. J. Shavelson, "Assessment of Higher-Order Thinking Skills. *Applied Measurement in Education*" 31, no. 3 (2018): 123–35.

¹³ Cassie Hague, "Fostering Higher-Order Thinking Skills Online in Higher Education : A Scoping Review" 306, no. 1 (2024): 1–44.

¹⁴ Rulyansyah Permata Putra et al., "Evaluation Analysis of Online Learning Platforms in Improving Critical Thinking Skills at SMPN 1 Sidomulyo" 7, no. 2 (2023): 317–20.

¹⁵ I Wayan Redhana, *Berpikir Kritis Pada Era Digital Pedoman Untuk Pemikiran Modern*, 2024.

¹⁶ Tsali Tsatul Mukarromah and Edi Harapan, "Literasi Digital : Pentingnya Keterampilan Abad Ke-21" 2 (2023): 109–16.

regarding the subject matter.¹⁷ Interesting and enjoyable evaluation activities in Arabic language learning can be created by utilizing various media variations and interactive learning methods.¹⁸ The purpose of evaluation is to improve methods, learning, make improvements and enrichment for students.¹⁹ The rapid advancement of technology has significantly affected the education sector. Various digital platforms are now integrated into teaching and learning processes, serving as tools for motivation, media for assessment, and means to enhance student engagement.²⁰

The use of this technology-based evaluation tool is seen as providing a variety of evaluation tools and mitigating the weaknesses of conventional evaluation systems.²¹ The integration of digital-based assessment tools has become increasingly important in modern education as it supports flexible evaluation, immediate feedback, and student engagement.²² This technology-based evaluation tool offers advantages such as auto-correction, time settings for completing questions and randomizing questions, and paperlessness to prevent cheating.²³

JotForm is an online form builder. It was first built for webmasters but users took it to a new level and is now used in way more than just as contact form.²⁴ The JotForm application can only be used online. Anyone can input data, as well as view the overall data results so that the data collection process is more efficient and effective.²⁵ Jotform is an easy-to-use and full-featured form builder application with hundreds of ready-to-use form templates and various integrations with third parties. This application is highly recommended for use as

¹⁷ Nur Aqilah Pohan, Tantri Mawaddah, and Irma Hidayah Batubara, “Pengembangan Alat Evaluasi” 7 (2023): 30701–5.

¹⁸ Jurnal Sadewa et al., “Penerapan Media Quizizz Sebagai Alat Evaluasi Pembelajaran Teks Artikel Di Kelas XII SMA Negeri 1 Semarang. Universitas Negeri Semarang. 2, no. 4 (2024): 13–22.

¹⁹ Neni Nurhasanah et al., “Evaluasi Pembelajaran Di kelas” 1, no. 2 (2023).

²⁰ Wildan Rinanda Komara and Syarah Salsabila, “Developing the Traditional Game Engklek to Teach Arabic Grammar in Madrasah Tsanawiyah” 9, no. 2 (2025), <https://doi.org/10.29240/jba.v9i2.12692>.

²¹ Alex Kumi-yeboah and Yanghyun Kim, “Exploring the Use of Digital Technologies from the Perspective of Diverse Learners in Online Learning Environments” 24, no. 4 (n.d.): 42–63.

²² C. Redecker, “European Framework for the Digital Competence of Educators. *Journal of Educational Technology*” 12, no. 3 (2017): 45–60.

²³ Dereje Andargie Tadesse Hagos, “Effects of Technology-Integrated Formative Assessment on Students’ Retention of Conceptual and Procedural Knowledge in Chemical Equilibrium Concepts” 33, no. 4 (2019): 383–91.

²⁴ Andi Runis Makkulau, “YUME : Journal of Management . Pemanfaatan Sistem Database Menggunakan Aplikasi Jotform Dalam Mendukung Pelaksanaan Pembelajaran E- Learning Di Masa Pandemi Covid-19” 4, no. 3 (2021): 121–32, <https://doi.org/10.37531/yume.vxix.234>.

²⁵ Sherina Nicky Lontaan et al., “Pengembangan Model Diagnostical Assesment Kurikulum Merdeka Berbasis Jotform Di SMA Kristen Sonder” 7 (2023): 21310–20.

a supporting tool for more optimal guidance, counseling assessment and evaluation.²⁶

The Arabic language learning evaluation process requires an instrument that is able to measure not only students' ability to remember, but also their ability to analyze, understand context, apply rules, and think critically.²⁷ Therefore, Jotform as a digital form creation platform is one of the solutions for developing modern Arabic language evaluation tools through the Higher Order Thinking Skills (HOTS) approach.²⁸ This research was conducted at Madrasah Islamic Senior High School Perguruan Muallimat Cukir Jombang, in class XI A students majoring in bilingual education with a total of 25 students.

This research uses the Research and Development method with the ADDIE research model: 1) Analysis, 2) Design, 3) Develop, 4) Implement, and 5) Evaluation,²⁹ The researcher focused solely on the ADD, Analysis, Design, and Development stages. This research began with the first step, analysis. This stage was conducted to identify problems, obtain information, and analyze the learning activities of class XI A students at Madrasah Islamic Senior High School Perguruan Muallimat Cukir Jombang. This stage includes three steps: needs analysis, curriculum analysis, and materials analysis. The second stage is the product design of the evaluation tool to be developed. In this second stage, the researcher created a product design. The product is a JotForm-based evaluation tool for health materials from Arabic language lessons for grade XI Madrasah Islamic Senior High School.

The evaluation methods used by teachers are mostly academic and oriented towards written exam results, methods that often make learning passive.³⁰ Meanwhile, in this sophisticated era, interactive learning and evaluation tools have emerged as the best solution by utilizing technology to create an interesting evaluation process.³¹ As presented by the researcher in this discussion, namely the development of an Arabic language evaluation tool using an online application, namely Jotform.

Arabic language evaluation is an activity to determine the level of success in Arabic language subjects, both in terms of reading, speaking, listening and

²⁶ Rahmi Ekawati, "Pengembangan Instrumen Penilaian Formatif Berupa Tes Berbasis Higher Order Thinking Skill (Hots) Berbantuan Aplikasi Jotform Pada Materi Perbandingan Kelas Vii," 2022.

²⁷ Azwar Afandi Baharsa et al., "Efektivitas Penggunaan Media Pembelajaran Berbasis Quizizz Dalam Meningkatkan Motivasi Belajar Siswa Smk Negeri 3," 2024, 11–16.

²⁸ Yusina Fadla Ilmi, Universitas Banten Jaya, And Banten Indonesia, "Efektivitas Penggunaan Aplikasi Quizizz Sebagai Kuis" 6, No. 1 (2023).

²⁹ Fayrus Abadi Slamet, *Model Penelitian Pengembangan (R n D)*, 2022.

³⁰ Mohammad Sofyan et al., "Effectiveness of the Quizizz Application in Improving Students' Reading Comprehension at SMP Darul Falah" 6, no. 2 (2024): 145–53.

³¹ Zuliyah Safitri and Umi Hanifah, "Al Mi ' Yar : Jurnal Ilmiah Pembelajaran Bahasa Arab Dan Kebahasaaraban Integrating Affective Evaluation in Arabic Language Learning : A Theoretical and Conceptual Analysis within the Indonesian Islamic Education" 8, no. 2 (2025): 528–36.

writing skills.³² Jotform is an online form that has various facilities to support evaluation and assessment activities for teachers.³³ Jotform is a social learning design, where people can learn together with the help of screens, projectors, and computer monitors or gadget screens.³⁴

The designs made include content (question creation), and appearance (meme creation, photo/image selection, audio and video creation) which will later be entered into the Jotform application. The third stage of development is the process of developing the design into an Arabic-language evaluation tool product using the Jotform application, testing its validity and feasibility for further use in the Arabic language learning evaluation process for the actual subject, namely class XI students Madrasah Islamic Senior High School students. Validation was conducted by validators (material experts, media experts, and language experts) to determine the feasibility of the developed evaluation tools.

Data collection techniques included observation and documentation. The research instruments used were tests and questionnaires. The eligibility criteria for the experts were as follows:

Table 1. Eligibility criteria for experts

Score	Criteria
5	Very Good
4	Good
3	Sufficient
2	Poor
1	Very Poor

The scores obtained are then averaged into quantitative data with the following references:

Table 2. validity level criteria

Achievement Criteria Value (%)	Validity Level
$\geq 81,5 - 100$	Very Valid
$\geq 62,5 - 81,5$	Valid
$\geq 43,5 - 62,5$	Less Valid
$\geq 25 - 43,5$	Not Valid

The next step is to do the calculation using the following formula

³² Fauziyyah Hana Saajidah, Triono Ali Mustofa, and Universitas Muhammadiyah Surakarta, "Arabic Language Learning Evaluation; Analysis Of Psychomotor-Based Assessment Forms," 2023, 214–24.

³³ Dina Zulfa and Nurul Ihsan, "Self-Assessment Development In Physical Education Learning On Under Service Materials Using Jotform" 4, no. 19 (2021): 440–50.

³⁴ Isnawati Amir, "Pengembangan Alat Evaluasi Pembelajaran Berbasis Mobile Learning Pada Mata Pelajaran Bahasa Indonesia Siswa Kelas Vii Smp 3 Kabu Kecamatan Kabu Kabupaten Bone," *Braz Dent J.* 33, No. 1 (2022): 1–12.

$$V_{ah} = \frac{T_{se}}{T_{sh}} 100\%$$

Description:

Vah: Expert Validation

Tse: Total score to be achieved

Tsh: Total expected score

In addition, researchers tested the test and questionnaire results using validity and reliability tests to obtain accurate data. Through this research, it is expected that the developed learning media can support more effective Arabic learning processes and improve students' critical thinking skills in accordance with the demands of 21st-century education.

Findings and Discussion

Analysis Phase

The analysis phase revealed a significant misalignment between the existing evaluation practices and the demands of 21st-century learning in Arabic language education. Observations in class XI A at Madrasah Islamic Senior High School Perguruan Muallimat Cukir Jombang showed that assessments were predominantly paper-based, focusing on Lower Order Thinking Skills (LOTS) such as recall and comprehension. This finding aligns with Aziz et al. who reported that HOTS-based questions in Arabic learning remain rare at the secondary level, limiting students' ability to analyze, evaluate, and create.

The gap becomes critical when contrasted with the school's available resources. Although students have access to laptops and Wi-Fi, these facilities are underutilized for assessment purposes. Teachers continue to rely on printed worksheets, resulting in a passive evaluation process that does not foster critical thinking. This condition creates both a challenge and an opportunity: the infrastructure exists, but the pedagogical approach and assessment tools have not adapted.

Table 3. Needs Analysis of Arabic Language Evaluation

Aspect	Existing Condition	Required Condition
Evaluation method	Paper-based test	Digital-based evaluation
Cognitive level Skills	Lower Order Thinking Skills	Higher Order Thinking Skills
Evaluation media	Printed worksheets	Interactive online application
Learning facilities	Laptops and Wi-Fi available	Optimization of digital technology

Thus, the analysis indicates the need for innovative Arabic language learning evaluation tools based on digital technology and oriented toward Higher Order Thinking Skills (HOTS). This innovation is expected to optimize available resources while encouraging students to think more critically, analytically, and reflectively in Arabic learning.

Design Phase

The design stage is the stage of designing the learning evaluation product based on the results of the previously conducted needs analysis. In this stage, researchers designed the structure, content, and appearance of the JotForm-based Arabic language learning evaluation tool, tailored to the core competencies, basic competencies, and learning indicators of grade XI Madrasah Islamic Senior High School students.

Table 4. Design Stages of the JotForm-Based Evaluation Tool

Stage	Description
Identification of KI and KD	Adjusted to the applied curriculum
Indicator formulation	Indicators oriented to HOTS
Test blueprint development	Multiple-choice questions with contextual stimuli
Interface design	Images, audio, and video integration
Instrument preparation	Uploading items into JotForm

Core competencies and basic competencies refer to the curriculum circular used by the school as follows:

Table 5. Analysis of core competencies in the Arabic language subject, health material for class XI

No	Core Competencies
1.	Respect and internalize the teachings of their religion.
2.	Demonstrate honest, disciplined, responsible, caring (tolerant, cooperative), polite, and self-confident behavior in interacting effectively with the social and natural environment within their social circle and existence.
3.	Understand and apply knowledge (factual, conceptual, and procedural) based on their curiosity about science, technology, art, and culture related to visible phenomena and events.
4.	Process, present, and reason in the concrete realm (using, analyzing, assembling, modifying, and creating) and the abstract realm (writing, reading, calculating, drawing, and composing) in accordance with what is learned in school and other sources that share the same perspective/theory.

After identifying KI and KD, the researcher created learning indicators and objectives. The next step is to present the indicators based on the basic competencies, as follows:

Table 6. Basic competencies and indicators for descriptive texts

Core Competency	Indicators
3.1 Understand the social function, text structure and linguistic elements (sound, words, meaning and grammar) of simple texts related to the theme: <i>الصحة</i> which are heard and read	<ul style="list-style-type: none"> • Determine the meaning of Arabic vocabulary about health • Determine sentences consisting of the structure of <i>jer majrur</i>
4.1 Analyze ideas from simple texts related to the theme: <i>الصحة</i> by paying attention to the form, meaning and function of grammatical structures (<i>حروف الجر وحروف العطف</i>) that are heard and read	<ul style="list-style-type: none"> • Determine whether a sentence about health is correct or incorrect • Analyze the correct answer • Determine words in terms of accuracy of writing according to what is heard

The software researchers used to create the evaluation tool was JotForm. The reason for choosing this application was that it makes it easier for teachers to create evaluation tools. Teachers can view each student's answers and points in the submissions column of their JotForm account without having to correct them individually. The next step is to create a learning evaluation framework. This framework is based on the descriptive material the students have learned, comprising 25 multiple-choice questions. For more details, see the following:

Table 7. Learning Evaluation Framework

No	Core Competencies	Indicators	Question Number	Number of Questions	Question Format
3.1	Understanding the social function, text structure, and linguistic elements (sound, words, meaning, and grammar) of simple texts related to the theme:	<ul style="list-style-type: none"> • Determining the meaning of Arabic vocabulary about health. • Determining the relationship between images and Arabic vocabulary about health according to what has been learned. 	1,2,3,4,5	5	Multiple choice

الصحة that are heard and read					
4.1	Applying discourse related to the topic of الصحة	<ul style="list-style-type: none"> • Matching between images and expressions/statements correctly according to what has been learned • Arranging words into perfect sentence • Determining the dignity of sentences correctly according to what has been learned 	9,10,11, 12,19,20	6	Multiple choice
4.2	Analyze ideas related to the theme: الصحة by paying attention to form, meaning and function	<ul style="list-style-type: none"> • Determine whether a sentence about health is true or false • Determine whether a sentence about health is true or false • Analyze the correct answer to complete the missing sentence 	6,7,8, 13,14, 15,16,	7	Multiple choice
3.2	Identifying information in descriptive texts about Islam that are heard and read	<ul style="list-style-type: none"> • Determining sentences that consist of jar majrur arrangements according to what has been learned • Determining the number of jer letters in a sentence according to what has been learned • Determining words in terms of spelling accuracy according to what is heard and read 	17,18, 21,22, 23,24, 25	7	Multiple choice

The design results show that the evaluation tool is designed not only to measure students' understanding of the material but also to train analytical, evaluation, and reasoning skills. The questions are structured using a HOTS approach, with stimuli in the form of text, images, and videos. The use of JotForm allows for a more varied and interactive presentation of questions compared to conventional assessments.

Development phase

In the development stage, researchers developed the previously created question grid into the JotForm application. The following is the design of the evaluation tool, an online Arabic language quiz, that was developed:



Figure 1. Initial Quiz Display

1. The following is a vocabulary quiz question about vocabulary, a multiple-choice question, that tests your ability to correctly determine the meaning of vocabulary. There are three questions of this type.



Figure 2. Display of the First Question on Vocabulary Comprehension



Figure 3. Display of Questions on Understanding Pictorial Vocabulary

2. After participants complete several questions on matching meaning and image, they will be presented with a question asking whether the image is

true or false based on the pictorial statement on the previous page. There are 3 questions of this type.



Figure 4. Display of Questions about Understanding Pictorial Statements

3. The following image is used to answer the previous question, namely determining whether the statement is true or false.



Figure 5. Display of the True or False Answer Column

4. After participants complete several questions on determining whether an image is true or false, they will be presented with a multiple-choice question asking them to identify the correct statement based on the image on the previous page. There are two questions of this type



Figure 6. Display of Questions on Understanding Pictorial Statements

- The following image is for answering the previous question, namely determining the correct answer from several available choices. There are 2 questions with this type of question.



Figure 7. Display of the multiple-choice answer column for the illustrated statement

- The following image is a reading text that participants can read first before answering the text comprehension questions.



Figure 8. Display of health reading text

- The following image is a question about text comprehension, with the question type being to arrange words into a complete sentence. There are two types of this question.



Figure 9. Display of questions about arranging words into perfect sentences

- Next is a question about understanding the text, with the type of question being filling in the missing sentences correctly according to the text. There are 2 questions of this type.



Figure 10. Display of questions about filling in missing sentences

- The following text comprehension questions are of the type that determine whether a statement is true or false based on the text. There are 2 questions of this type.

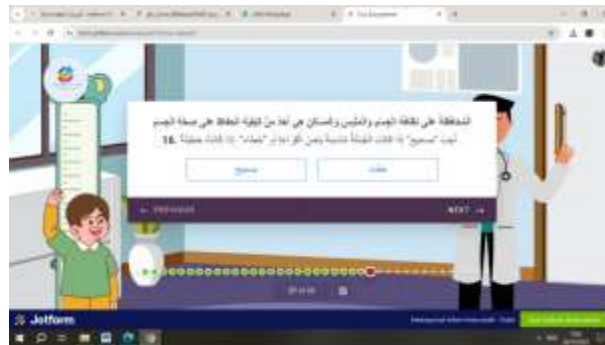


Figure 11. Display of questions about determining whether a statement is true or false

- The following questions on understanding *qowaid* contain two questions of this type, namely determining sentences consisting of the structure of *jer majrur* and determining the number of *jer* letters in a sentence.



Figure 12. Display of questions on understanding qowaid jer majrur

11. The following questions are about understanding qowaid, namely correctly pronouncing the vowels in a sentence. There are 2 questions of this type.



Figure 13. Display of questions about pronouncing sentences perfectly.

12. The following is an *istima'* or listening question. Participants must watch and listen to a YouTube link to answer the question.

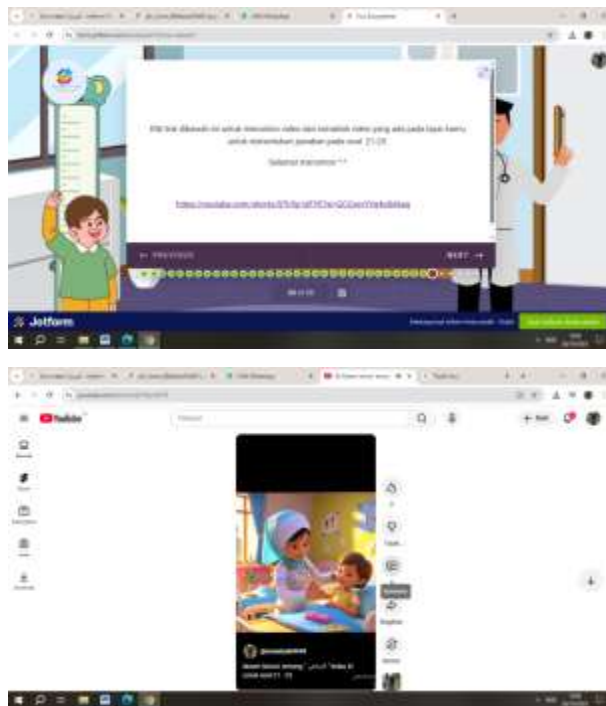


Figure 14. YouTube video display

13. The following *istima'* questions contain 5 questions of this type, namely participants fill in missing sentences by choosing the correct answer from a written perspective, as heard in the previous YouTube video.



Figure 15. Istima' question display

14. When participants have completed all the questions, click "submit" by clicking the submit icon, and the answers will be recorded.



Figure 16. Final view of the quiz

The second discussion focused on the validity and feasibility of the evaluation tool. Validation was conducted by material, media, and language experts. The validation of the JotForm evaluation tool was conducted by Ms. Nuroh Aisyah, S.Pd., an Arabic language teacher for grade XI A at MA Perguruan Muallimat, and was conducted once. The validation results ranged from 62.5% to 81.5%, with a total of 75% being declared valid. The data from the material expert validation results are in the form of quantitative data presented in the following table:

Table 8. Results of the material expert validation analysis

No	Questions	Tse	Tsh	P (%)	Validity Level
1	The material presented aligns with the 2013 curriculum.	4	5	80	Valid
2	The question items align with the material taught to 11th-grade Aliyah students.	4	5	80	Valid
3	The evaluation questions in the JotForm application are presented clearly and concisely.	4	5	80	Valid

4	The presentation of questions in the JotForm application aligns with core competencies and indicators.	4	5	80	Valid
5	The JotForm application contains images that can help understand the questions.	4	5	80	Valid
6	The images in the JotForm app correspond to the questions.	4	5	80	Valid
7	The presentation of questions in the JotForm app encourages students to think more deeply and critically	4	5	80	Valid
8	The presentation of questions in the JotForm app encourages students to listen, read, hear, and write Arabic well.	3	5	60	Less Valid
9	The questions presented in the JotForm app can increase student engagement	4	5	80	Valid
10	The presentation of questions in the Istima' material in the JotForm app using videos makes it easier for students to focus their knowledge	3	5	60	Less Valid
11	The reading material questions in the JotForm app use images, making it easier for students to analyze	4	5	80	Valid
12	The Tarkib material questions in the JotForm app make it easier for students to create and consider their answers	3	5	60	Less Valid
13	Students can easily complete the questions presented in the JotForm app	3	5	60	Less Valid
14	The questions provided in the JotForm app have clear instructions	4	5	80	Valid
15	The presentation of the test results can be used by students as a reference for calculating their listening, reading, and writing skills.	4	5	80	Valid
Total		56	75	75	Valid

Meanwhile, the validation of the JotForm evaluation tool was conducted by Dr. Abdul Qodir, M.Pd.I, a media expert lecturer in the Arabic Language Education Department of Hasyim Asy'ari University. The results ranged from 81.5% to 100%, 87% considered very valid. The quantitative data from the media expert validation results can be seen below:

Table 9. Results of the media expert validation analysis

N o	Questions	Tse	Tsh	P (%)	Validity Level
1	Effective use of learning evaluation applications	4	5	80	Valid
2	Efficient and engaging quiz applications	5	5	100	Very Valid

3	The questions presented in the JotForm application facilitate student evaluation activities	4	5	80	Valid
4	Reusable quiz applications	4	5	80	Valid
5	Easy-to-use quiz applications	4	5	80	Valid
6	A quiz application that can run on various hardware and software	4	5	80	Valid
7	An easy-to-use quiz application	5	5	100	Very Valid
8	Choosing the right software for learning evaluation activities	5	5	100	Very Valid
9	Suitability of media and learning objectives	4	5	80	Valid
10	Suitability of media and learning materials	4	5	80	Valid
11	The attractive use of color	5	5	100	Very Valid
12	The variety of quiz content	5	5	100	Very Valid
13	The suitability of media to student characteristics	5	5	100	Very Valid
14	The use of images to match the questions presented is appropriate	4	5	80	Valid
15	The image and video design in the JotForm evaluation and the question design in JotForm help students improve their critical thinking	4	5	80	Valid
16	The video-based questions presented without subtitles allow students to focus and think more deeply.	5	5	100	Very Valid
17	The material in the questions is conveyed well.	4	5	80	Valid
18	The JotForm evaluation app is presented to students who have already studied the "as shihah" material.	4	5	80	Valid
19	The image display in the JotForm evaluation app is attractive.	4	5	80	Valid
20	The font used in the questions is easy to read.	4	5	80	Valid
Total		87	100	87	Very Valid

Validation by linguists was conducted by Dr. Mu'at, M.Pd., a lecturer in Arabic Language Education at Hasyim Asy'ari University. The results of the linguist validation analysis ranged from 62.5% - 81.5%, with of 81% being declared valid. The quantitative data from the linguist expert validation results can be seen below:

Table 10. Results of the language expert validation analysis

No	Questions	Tse	Tsh	P (%)	Validity Level
1	The sentence structure presented in the questions is accurate.	4	5	80	Valid

2	The language used in the questions is effective.	4	5	80	Valid
3	The questions presented in the JotForm application use fusha Arabic.	5	5	100	Very Valid
4	The words presented in the JotForm application do not have double meanings	4	5	80	Valid
5	The presentation of questions in the JotForm application is easy to understand	4	5	80	Valid
6	The presentation of questions in the JotForm application motivates students to think critically.	4	5	80	Valid
7	Suitability to students' intellectual development	4	5	80	Valid
8	Suitability to students' emotional development	4	5	80	Valid
9	Suitability of language structure to Arabic qowaidul lughah	4	5	80	Valid
10	Accuracy of grammar used in questions.	4	5	80	Valid
11	Accuracy of spelling of language used in questions.	4	5	80	Valid
Total		45	55	81	Valid

Table 11. Expert Validation Results

Validator	Percentage (%)	Category
Material expert	75	Valid
Media expert	87	Very valid
Language expert	81	Valid

The validation results from material experts, media experts, and language experts indicate that the developed evaluation tool is categorized as "suitable" for use. Material experts assessed that the content, indicators, and test items are in accordance with the objectives of Arabic language learning. In contrast, media experts assessed that the appearance, navigation, and ease of access of the application are good and attractive for students. Language experts assessed the suitability of grammar with good and correct *qowaid*. Thus, the development of the JotForm-based Arabic language evaluation tool is proven valid and suitable for use in supporting the student learning evaluation has been process and for helping teachers create more modern, efficient evaluations oriented towards developing students' critical thinking skills.

Thus, the development phase resulted in a valid and usable JotForm-based Arabic language learning evaluation tool. This product can be an innovative alternative in the learning evaluation process not only technically efficient but also effective in supporting the development of critical thinking skills among Madrasah Islamic Senior High School students.

The study developed a JotForm-based assessment model designed to transition from LOTS to HOTS : Interactive and Flexible Item Design: JotForm allows the integration of open-ended questions, case-based scenarios, and conditional logic that require students to analyze information and construct

arguments rather than select predefined answers. This aligns with Ennis's indicators of critical thinking, particularly inference and advanced clarification. Immediate Feedback and Reflection: Unlike paper-based tests, JotForm provides automated scoring and feedback features. Immediate feedback encourages students to reflect on their reasoning process, which is essential for developing evaluative and metacognitive skills. Accessibility and Scalability: As a no-code platform, JotForm enables teachers with limited IT skills to create and modify assessments iteratively. This supports the full-cycle implementation of the ADDIE model, enabling the assessment be refined based on evaluation data.

Therefore, the JotForm-based model does not merely digitize the existing test format. It reconstructs the assessment experience to require higher cognitive engagement. By shifting from static, paper-based evaluation to an interactive, feedback-oriented digital environment, the model creates conditions that scaffold students' progression toward HOTS. This finding confirms that technological tools alone are insufficient; their impact depends on how they are designed to target specific cognitive processes.

These findings confirm that digital-based assessment tools can support the development of students' critical thinking skills when systematically designed and validated. The findings of this study are consistent with previous research indicating that well-designed digital assessment tools can effectively support HOTS-oriented evaluation and enhance students' critical thinking skills.

In the context of Madrasah Islamic Senior High School education, particularly in Islamic senior high schools, evaluation practices are often still dominated by conventional paper-based tests that emphasize memorization and surface-level understanding. This condition contrasts with the current educational demands that require students to develop critical, analytical, and reflective thinking skills. Integrating digital evaluation tools such as JotForm aligns with the learning culture of today's students, who are familiar with technology and digital platforms. Moreover, the use of technology-based assessments in Islamic educational institutions supports the modernization of learning without neglecting the core values and objectives of Islamic education.

The implementation of the HOTS approach in the JotForm-based assessment model supports students' critical thinking development by requiring them to understand contexts, analyze information, and determine appropriate answers through reasoning processes rather than memorization. In addition, digital-based assessments provide immediate feedback, increase students' learning motivation, and facilitate teachers in monitoring students' learning outcomes more efficiently. The high validation score from media experts suggests that the platform's usability and interface contribute positively to student engagement. These findings suggest that well-designed digital assessment tools can transform

evaluation from a passive activity into an active learning process that stimulates critical thinking.

One important insight from this research is that assessment should not merely function as a measurement tool, but also as a learning medium that fosters higher-level cognitive processes. The development process highlights the importance of aligning evaluation instruments with learning objectives, student characteristics, and technological readiness. This study demonstrates that teachers can utilize simple and accessible digital platforms to create meaningful assessments that support students' intellectual growth. Thus, innovation in evaluation design plays a crucial role in improving the quality of learning outcomes.

The findings of this study are consistent with previous research that emphasizes the effectiveness of digital and HOTS-based assessment tools in enhancing students' critical thinking skills. Several studies have reported that online evaluation platforms provide flexibility, efficiency, and increased student motivation compared to traditional assessment methods. Similar to earlier research on Quizizz and other digital tools, this study confirms that technology-assisted assessment can improve student engagement and cognitive performance. However, this research specifically contributes to the field of Arabic language education by providing a validated JotForm-based assessment model tailored to Madrasah Islamic Senior High School students.

The implications of this study suggest that Arabic language teachers are encouraged to integrate digital evaluation tools into their assessment practices to support HOTS development. The developed JotForm-based assessment also supports the demands of 21st-century learning by integrating technology into the evaluation process. This finding indicates that digital assessment media can serve as an effective alternative for evaluating Arabic language learning, especially in improving students' Higher Order Thinking Skills (HOTS). Thus, the use of JotForm not only functions as an evaluation medium but also as a learning tool that facilitates critical, active, and reflective learning processes. For future research, it is recommended to conduct effectiveness testing through experimental or quasi-experimental designs to measure the impact of the developed instrument on students' learning outcomes. Additionally, further studies may explore the integration of JotForm with other learning management systems to enhance assessment quality and scalability.

Conclusion

This research resulted in a JotForm-based Arabic language evaluation tool that has undergone design, development, and expert validation. In the design stage, the researchers developed the evaluation tool product to be developed. The next stage, the development stage, is the process of developing the design into an Arabic-language learning evaluation tool using the JotForm application. This Jotform tool was designed to improve and develop students' critical thinking

skills. Based on the calculations, the material validation results obtained a score of 75%, which falls within the range of 62.5% - 81.5%, and can be classified as “valid and appropriate” for use and can be tested without review. At the same time, the media verifier results scored 87%, which falls within the range of 81.5% - 100% and is classified as very valid and can be used with the reviews provided. The language verifier results scored 81%, which falls within the range of $\geq 62.5\%$ - 81.5% and is classified as valid. Thus, JotForm is highly valid and suitable for use as an evaluation tool to support students' critical thinking skills.

The contribution of this research to the field of Arabic Language Education is threefold: Practical Contribution: The study provides Arabic teachers, especially in madrasah and secondary schools, with a ready-to-use, low-cost digital assessment model using JotForm. This model enables teachers to design HOTS-based questions without requiring advanced programming skills, making technology integration feasible in resource-limited settings. Pedagogical Contribution: By embedding case-based and open-ended questions aligned with Ennis's critical thinking indicators, the instrument shifts Arabic assessment from memorization toward analysis, evaluation, and creation. This supports the implementation of the Merdeka Curriculum, which emphasizes the development of 21st-century competencies and character through P5 projects. Academic Contribution: The research demonstrates that the partial implementation of ADDIE, commonly found in previous studies, can be overcome through accessible digital platforms. It provides an empirical example of how all five phases of ADDIE can be applied in Arabic language assessment development, offering a methodological reference for future research.

Implications for practice, schools and teachers are encouraged to utilize digital tools like JotForm not merely for efficiency, but to redesign assessment experiences that cultivate critical thinking. For policy, institutions should provide training and infrastructure support to ensure sustainable use of digital assessment, for future research experimental studies are recommended to measure the effectiveness of this instrument on students' actual HOTS achievement and to explore its integration with learning management systems for broader scalability.

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