



Developing a Contextual Approach-Based Interactive E-LKPD with Liveworksheet for Arabic Language Learning

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ENGLISH ABSTRACT

The implementation of conventional teaching methods that fail to address students' needs has significantly contributed to low engagement and comprehension in Arabic language learning at Islamic Senior High School KH. Abd. Wahab Hasbulloh Jombang. This study aims to develop an interactive E-LKPD (Electronic Student Worksheet) using Liveworksheet with a contextual approach to enhance students' Arabic language proficiency. Employing a Research and Development (R&D) methodology with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), data were collected through interviews, observations, questionnaires, and tests. Data analysis incorporated both qualitative and quantitative descriptive methods, including normality tests, paired samples t-tests, and N-Gain tests. The developed E-LKPD effectively presents As-Safar learning materials interactively and contextually, integrating practice exercises through the Liveworksheet platform. Expert validation confirmed the high validity of both the content and instructional media. Furthermore, effectiveness testing demonstrated that the context-based E-LKPD using Liveworksheet significantly improves students' Arabic language comprehension, confirming its efficacy as an instructional tool.

Keywords: E-LKPD, Liveworksheet, Contextual, Arabic Language, Digital Learning Media

INDONESIAN ABSTRACT

Penerapan metode pembelajaran konvensional yang tidak sesuai dengan kebutuhan siswa telah berdampak signifikan terhadap rendahnya keterlibatan dan pemahaman dalam pembelajaran bahasa Arab di MA KH. Abd. Wahab Hasbulloh Jombang. Penelitian ini bertujuan untuk mengembangkan E-LKPD (Lembar Kerja Peserta Didik Elektronik) interaktif menggunakan Liveworksheet dengan pendekatan kontekstual guna meningkatkan kemahiran bahasa Arab siswa. Dengan menggunakan metode Penelitian dan Pengembangan (R&D) model ADDIE (Analisis, Desain, Pengembangan, Implementasi, Evaluasi), data dikumpulkan melalui wawancara, observasi, kuesioner, dan tes. Analisis data menggabungkan metode deskriptif kualitatif dan kuantitatif, termasuk uji

normalitas, uji-t sampel berpasangan, dan uji N-Gain. E-LKPD yang dikembangkan berhasil menyajikan materi As-Safar secara interaktif dan kontekstual dengan mengintegrasikan latihan soal melalui platform Liveworksheet. Validasi ahli mengkonfirmasi validitas tinggi baik untuk konten maupun media pembelajaran. Lebih lanjut, pengujian efektivitas menunjukkan bahwa E-LKPD berbasis kontekstual menggunakan Liveworksheet secara signifikan meningkatkan pemahaman bahasa Arab siswa, mengukuhkan efektivitasnya sebagai alat pembelajaran.

Kata Kunci: *E-LKPD, liveworksheet, Kontekstual, Bahasa Arab, Media Pembelajaran Digital*

Introduction

In Arabic language learning, student worksheets (LKPD) are frequently used to practice grammar rules (*qawā'id*), to expand vocabulary (*mufradāt*), and to enhance reading and writing skills (Nurisman et al., 2024). LKPD fosters active and structured learning by encouraging students to not only receive material passively but also apply it independently (Hayati et al., 2022). However, the absence of worksheets in the classroom can reduce the effectiveness of learning. Students become overly dependent on teacher explanations and textbooks, making it more difficult for them to grasp the material effectively (Alexon, 2024).

The claim that LKPD is less interactive and conventional stems from several limitations. First, its paper-based format lacks digital affordances such as instant feedback, multimedia integration, and adaptive exercises features crucial for language learning (Hayati & Rizki, 2024). Second, traditional LKPD often employs rigid question-answer structures (e.g., fill-in-the-blank or multiple-choice), which limit creative application and student-centered exploration (Ramadhani et al., 2023). This is particularly problematic for Arabic language acquisition, where dynamic interaction (e.g., pronunciation drills via audio, real-time writing correction) is essential (Pane and Zulheddi, 2023). Latifah (2024) also notes that most LKPD designs in Islamic senior high schools remain text-heavy without leveraging gamification or interactive simulations, further reducing engagement. These factors justify the need for e-LKPD development to address pedagogical gaps in the digital era.

Technology has significantly influenced educational practices in the 21st century, including Arabic language instruction. The use of computers, tablets, and projectors has become commonplace in many schools (Mantau & Talango, 2023), enabling innovative

approaches to teaching challenging aspects like phonetics and grammar. Educators are not limited to books and whiteboards but also integrate technology into instructional delivery (Rokhani et al., 2024). This shift is supported by educational policies that encourage the adoption of digital tools in teaching (Firdaus & Robandi, 2023). Many students are now familiar with accessing learning resources through e-books or digital modules, equipping them with essential digital literacy skills for the future (Lailan, 2024). Technology-enhanced learning offers three key advantages for Arabic: (1) immediate access to materials, (2) deeper conceptual understanding through multimedia, and (3) practical application in authentic contexts like media analysis (Indarta et al., 2021; Sari et al., 2022).

Within this context, e-LKPD serves as a practical solution that not only makes learning more engaging but also increases student involvement, especially at the Islamic Senior High School level (Pratiwi, 2023). With features such as audio for Arabic text practice, video dialogues of real Arabic conversations, drag and drop activities for vocabulary building, and automatic grading for instant feedback, e-LKPD supports a more dynamic learning style (Saenab & Garancang, 2024). It allows students to learn independently, repeatedly, and flexibly, both in and outside of the classroom. Thus, e-LKPD meets students' needs for interactive, accessible, and personalized learning experiences (Waraqah et al., 2021).

One of the platforms that supports the development of interactive e-LKPD is Liveworksheet. This digital tool empowers educators to convert conventional paper-based worksheets into dynamic digital formats enhanced with multimedia elements (Bela & Ferawaty, 2023), particularly valuable for Arabic instruction, where audio-visual components are crucial. Combining e-LKPD with the Liveworksheet platform has been shown to increase student motivation and make Arabic learning more enjoyable (Syafaah et al., 2024).

However, to maximize the effectiveness of e-LKPD for Arabic language acquisition, it is essential to implement an appropriate teaching approach. One approach that aligns well with students' characteristics and needs is Contextual Teaching and Learning (CTL). The goal of the contextual approach is to help educators connect academic content with real-world scenarios, such as using Arabic in real-life activities, and to support students in linking what they learn in school with how it applies in their

daily lives (Hamzah, 2012). In e-LKPD, CTL is implemented by adopting its core principles such as constructivism through analyzing authentic Arabic materials, inquiry-based exploration of language patterns, collaboration on projects like creating Arabic content for social media, modeling of real communication situations, reflection on language use in religious contexts, and authentic assessment through practical tasks (Hakim et al., 2020). These strategies make learning more meaningful and allow students to develop Arabic language skills; speaking, listening, reading, and writing in a natural and integrated manner (Zunoomy et al., 2019)

There are previous studies that use E-LKPD interactive learning media to improve learning outcomes, understanding, and language skills in Arabic language learning. As conducted by Munawir et al. (2022) entitled "Development of Arabic Learning Media Based on Liveworksheets at the Basic Education Level," this study focuses on distance learning on student learning outcomes in Arabic lessons using liveworksheet media. The results showed significant effectiveness in improving learning outcomes (Munawir et al., 2022). However, this study did not combine it with CTL learning.

Research conducted by Cut Nikmatul Ulya (2023) entitled "The Use of LKPD Through Liveworksheets in Arabic Language Teaching at MTsN 1 Banda Aceh." This research explores Liveworksheet-based worksheets for Arabic-speaking skill development, showing notable student improvement. The digital tool effectively enhanced oral communication abilities in Arabic language learning (Ulya, 2023). In this study, only the effectiveness of using Liveworksheet, which is not yet integrated with CTL and does not involve development methods, was tested.

Susanti et al. (2022) developed Liveworksheet-based interactive materials for high school Arabic lessons. this study aims to develop interactive materials and Liveworksheet-based media for Arabic language learning to enhance students' critical thinking skills. The research findings demonstrate that the developed product is valid and practical. However, data indicate that the percentage of students' critical thinking achievement in Arabic language instruction remains relatively low (Susanti & Salam, 2022).

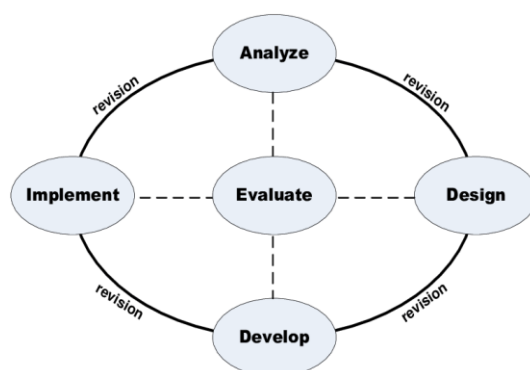
According to Izzan in a study conducted by Sugirma et al. (2022), there are two types of problems in learning Arabic, namely internal problems and external problems.

Internal challenges include learning motivation, while external challenges relate to the learning methodology and linguistic environment (*Bi'ah Lughawiyyah*). Initial observations revealed a notable decline in student engagement and suboptimal material comprehension. This appears attributable to conventional teaching methodologies that predominantly employ lecture-based instruction, limited to reading activities, written exercises, and rote memorization. Furthermore, the minimal integration of technological tools in Arabic language instruction exacerbates these learning challenges. To overcome these problems, the researcher offers a solution by creating an interactive E-LKPD learning media that utilizes hands-on worksheets based on a contextual approach to increase learning motivation and optimize students' Arabic comprehension.

Based on the background above, it can be seen that the problem statement is articulated through these questions: (1) How is the development process of contextual approach-based interactive E-LKPD using Liveworksheet for Arabic language material? (2) To what extent is the developed Liveworksheet-based interactive E-LKPD with a contextual approach valid and effective for Arabic language comprehension? This research intends to: (1) examine the process of developing using Liveworksheet for Arabic material, and (2) identify the validity and effectiveness of the developed product in enhancing Arabic language understanding.

Methods

This research utilizes a developmental research approach, implementing the systematic ADDIE instructional design framework initially conceptualized by Dick and Carey (1996) and subsequently referenced in contemporary studies (Hidayat & Nizar, 2021). The model's five iterative stages - encompassing needs analysis, instructional design, material development, practical implementation, and comprehensive evaluation (Amankwaah et al., 2024). We selected this framework for its efficacy in developing pedagogically sound learning materials (Syahid et al., 2024). The current project applies this methodology to create contextualized E-LKPD materials using the Liveworksheet platform through sequential ADDIE phases.

Picture 1. ADDIE Model Development Procedure

The interactive E-LKPD development using Liveworksheet with a contextual approach for Arabic learning involves five stages. First, in the analysis stage, researchers conducted several activities in the form of needs analysis and material analysis by interviewing, observing, and distributing questionnaires to understand learning needs and student characteristics. Interviews were conducted with one Arabic teacher to examine the appropriateness of learning materials, instructional methods, and challenges in teaching. Additionally, three students were interviewed to understand their learning experiences, difficulties faced, and expectations for more interactive learning media. Classroom observations took place across two Arabic lessons to analyze student engagement, teacher-student interactions, and the utilization of learning resources.

Moreover, a questionnaire was administered to 45 students, featuring both closed-ended (Likert-scale) and open-ended questions. The closed-ended section measured students' interest in Arabic lessons, learning obstacles, and exposure to digital tools, while the open-ended part allowed them to express opinions and suggestions on Arabic learning and preferred media formats. Second, the results of the analysis become a reference in the design stage, which includes the design of materials, the creation of E-LKPD through Canva, and the incorporation of questions into the E-LKPD. Third, development involves downloading the pre-existing design and then uploading it to the Liveworksheet platform to incorporate interactive elements. The designed E-LKPD was then confirmed by media and material experts. The fourth step is to implement the product to students and give them tests both before and after the use of the media to

assess their understanding of the material provided. Then, a questionnaire is given to students to assess the practicality of the product. The fifth step involves evaluation by reviewing aspects related to the product developed from each stage.

The investigation utilized two distinct data types: qualitative information obtained through interviews and observational studies to analyze student needs and learning responses, where observations specifically helped identify students' actual behaviors and difficulties during Arabic language learning activities, alongside quantitative measurements. In contrast, quantitative data was collected through surveys and student test scores, which were used to evaluate the efficacy of the product.

The data obtained were then assessed through two methodologies: quantity and quality analysis. Quantitative data derived from the questionnaire were studied to evaluate the validity of the responses from professionals and students after the use of the product. Simultaneously, the test results were analyzed by employing normality checks, paired sample examinations, and N-Gain measurements to evaluate the proposed solution's impact and performance. Qualitative data analytics were utilized to scrutinize descriptive data collected from observations, interviews, and feedback from professionals and students.

This study involved Class XI-4 with 45 students from MA Unggulan KH. Abd. Wahab Hasbulloh (MAUWH), selected through purposive sampling. The selection criteria were based on interview and observation data indicating students' low learning engagement and significant difficulties in material comprehension, primarily due to traditional teaching methods lacking contextualization and technological integration. The implementation of technology-based learning media was anticipated to offer an innovative solution to enhance student engagement and understanding.

Class XI-4 was chosen as a representative sample, with its student composition mirroring other Class XI cohorts, ensuring the study's findings could be broadly applicable. Additionally, the study included two expert validators: (1) a content expert (an Arabic language teacher from MAUWH) and (2) a media expert (a lecturer specializing in Information Technology at UNWAHA Jombang).

Development of Interactive E-LKPD with Liveworksheet Based on Contextual Approach on Arabic Language Material

The development of a contextual approach-based interactive E-LKPD using Liveworksheet for Arabic language materials followed the systematic stages of the ADDIE model, with results presented as follows:

Analyze Stage

The analysis stage involved a comprehensive examination of student needs and material requirements as the foundation for E-LKPD development. We gathered information by conducting classroom observations and interviewing educators and learners.

Interviews with Arabic language teachers revealed a pressing need for more engaging learning media that could enhance student motivation. Teachers noted varied learning characteristics among students, with some comprehending material through direct explanation while others required supplementary audio-visual aids. (Hadi, 2019) research underscores the importance of interactive media in creating enjoyable and meaningful Arabic language learning experiences. However, teachers reported minimal technology integration due to time constraints and heavy workloads.

Student interviews highlighted widespread dissatisfaction with current monotonous methods focused solely on reading, writing, and memorization, leading to decreased motivation. This was quantitatively reflected in questionnaires (n=45) showing: 76% struggled with conventional instruction, 79% demanded contextual learning linkages, and 87% preferred multimedia integration, so the average showed 76.76%, which means students' agreement on the need for media development with Liveworksheet based on a contextual approach.

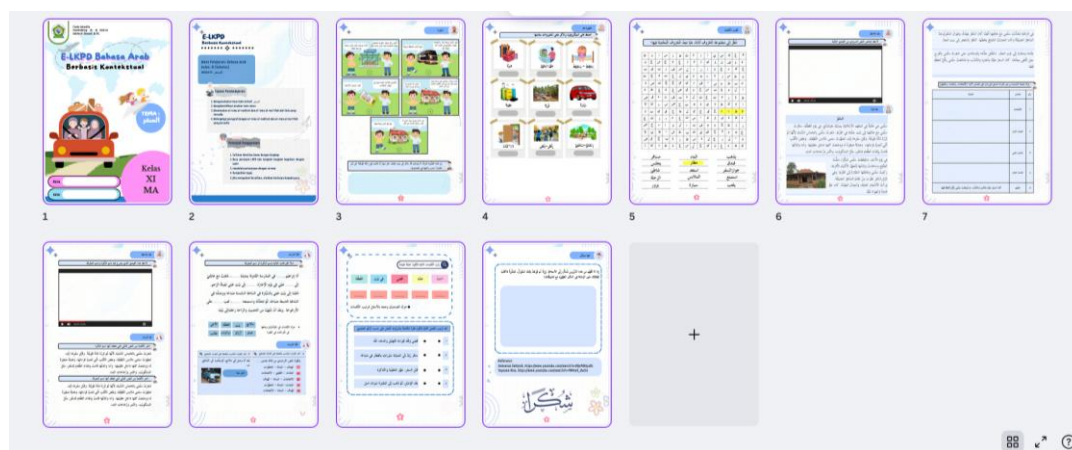
The material analysis focused on developing contextual content aligned with students' experiences and abilities. These findings collectively informed the E-LKPD design to address the identified challenges in motivation, engagement, and comprehension in Arabic language learning.

Design Stage

In the design stage, researchers designed E-LKPD with the theme As-Safar combined with a contextual approach. The material is based on Basic Competencies (KD) and Competency Achievement Indicators (IPK), and is equipped with relevant illustrations so that they can connect the topic with real experiences.

E-LKPDs are designed in simple Arabic language and are displayed by the comprehension level for MAUWH students. The design process is carried out with the Canva platform, which includes making the cover, identity sheet, material content, and exercise questions. E-LPKDs are made in A4 size, with rich illustrations and colors to increase visual appeal. After the design is completed, it is then downloaded in PDF format and then carried out the development stage on the Liveworksheet platform. Here is the design of E-LKPD on the Canva platform.

Picture 2. E-LKPD Design



Development Stage

During the development phase, researchers transformed the initially designed E-LKPD from its original PDF format (created using Canva) into an interactive digital worksheet through integration with the Liveworksheet platform. E-LKPD, which has already been developed, is then validated using media and also using materials to ensure validity.

Here are the outcomes of E-LKPD that were developed using the liveworksheet platform:

Picture 3. E-LKPD after Development

Implementation Stage

The implementation of the product, E-LKPD Interactive with Liveworksheet Based on Contextual Understanding, is used in XI-4 classes, which consist of 45 students, to enhance their understanding of the As-Safar material. Before using E-LKPD, students participated in pre-tests to gauge their initial understanding. Subsequently, the researcher provides a practical question to connect the material with the students' understanding before sending the link to the E-LKPD live worksheet. After completing the product trial, students filled out a response questionnaire to evaluate the feasibility of the product. The final step is a post-test designed to gauge students' understanding after using the E-LKPD live worksheet based on context.

Evaluation Stage

As the final step in the ADDIE process, the evaluation phase completes the instructional design cycle, where we conduct comprehensive assessments of the developed instructional media. This critical evaluation process involved multiple validation components, including expert reviews by media and content specialists, as well as empirical data collected from student users through response questionnaires. We systematically analyzed both qualitative feedback from validator reports and quantitative data from these student evaluations.

Expert Validation Results

To ensure the quality of the developed product, the researcher conducted a validity test involving two expert validators: a material expert (an Arabic language specialist) and a media expert (an instructional technology specialist). The validation process was carried out using a Likert-scale questionnaire (1–5), assessing various aspects of the E-LKPD. The following is a measurement indicator that uses a Likert scale:

Table 1. Likert Scale of Product Validity

No	Category	Score
1.	Excellent	5
2.	Good	4
3.	Fair	3
4.	Poor	2
5.	Very Poor	1

Then calculate a percentage using the formula (Sugiyono, 2020):

	Description:
$P = \frac{\sum x}{\sum xi} \times 100\%$	P = Percentage $\sum x$ = Number of Assessment Answer $\sum xi$ = Highest Number of answer

Criteria for interpreting score results from the following questionnaire:

Table 2. Media Quality Ratings

Percentage	Ratings
81- 100%	Highly Valid, can be implemented without revision
61 - 80%	Valid, usable, but needs some revision
41 - 60%	Moderately valid, not recommended, requires major revisions
21 - 40%	Invalid, should not be used
0 - 20%	Highly invalid, must not be used

Below are the outcomes obtained from the media specialists' validity assessment:

Table 3. Media Validator Result

Assessment Indicator	Item Number	Validator Assessment
A. Ease of operating and understanding the liveworksheet	1	4
	2	5
	3	5
B. Liveworksheet E-LKPD Cover/Cover	4	5
	5	5
	6	5
C. Appropriateness in the appearance or design of the E-LKPD liveworksheet	7	5
	8	4
	9	4
	10	4
D. Accuracy in writing the E-LKPD liveworksheet	11	5
	12	4
	13	4
	14	4
E. Appropriateness of using a contextual approach	15	5
	16	4
Total		72
Maximum Score		80
Percentage		90%
Category		Highly Valid

The percentage result is 90% was obtained from the following calculation:

$$P = \frac{\sum x}{\sum xi} \times 100\% = \frac{72}{80} \times 100\% = 90\%$$

Media experts rated the material at 90% validity, placing it in the highest validity category and confirming its readiness for use. The full validation outcomes are displayed in the table:

Table 4. Material Validation outcomes

Assessment Indicator	Item Number	Validator Assessment
A. Appropriateness of Material	1	5
	2	4
	3	5
	4	4
B. Clarity of purpose of materials and questions	5	5
	6	4
C. Developing Thinking Skills	7	5
	8	4
	9	5
	10	5
D. Contextual Approach Elements	11	5
	12	5
	13	5
	14	5
E. Good and Correct Sentence Structure	15	4
F. Sentences are Easy to understand	16	4
Total score		74
Maximum Score		80
Percentage		92,5 %
Category		Highly Valid

The percentage score of 92.5% is obtained from the following calculation:

$$P = \frac{\sum x}{\sum xi} \times 100\% = \frac{74}{80} \times 100\% = 92,5\%$$

With a 90% percentage, it can be said that the content in the E-LKPD live worksheet with a contextual approach has very valid criteria.

Results of Product Effectiveness

Product effectiveness was statistically evaluated through pre-test/post-test comparisons using normality tests, paired sample test, and N-Gain analysis.

Normality Test

This distribution test verifies data normality to inform proper statistical treatment, examining:

H₀: Data are normally distributed in the population

H₁: Population data deviate from normality

Table 5. Normality Test Outcomes
One-Sample Kolmogorov-Smirnov Test

			Unstandardiz ed Residual
N			45
Normal Parameters ^{a,b}	Mean		,0000000
	Std. Deviation		4,56472013
Most Extreme Differences	Absolute		,087
	Positive		,067
	Negative		-,087
Test Statistic			,087
Asymp. Sig. (2-tailed) ^c			,200 ^d
Monte Carlo Sig. (2-tailed) ^e	Sig.		,517
	99% Confidence Interval	Lower Bound	,505
		Upper Bound	,530

The K-S test demonstrates normality compliance ($p = 0.200$), as the obtained significance value exceeds the conventional 0.05 cutoff threshold, thereby meeting the parametric assumptions required to proceed with the paired sample t-test for subsequent analysis.

Paired Sample test

This matched-pairs analysis evaluates learning gains by comparing before-after measurements through hypotheses:

H₀: No effect on the learning process of Arabic material as-Safar using interactive E-LKPD media live-worksheet based on contextual approach.

H₁: Influence on the learning process of Arabic material as-Safar using interactive E-LKPD media live-worksheet based on a contextual approach.

Table 6. Paired Samples Test Result

		Paired Samples Test							
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	pretest - posttest	-35,73333	16,72152	2,49270	-40,75703	-30,70963	-14,335	44	<,001

The paired samples t-test yielded a statistically significant result ($p = .001$, two-tailed), surpassing the conventional alpha level of .05. This necessitates rejection of the null hypothesis (H_0), confirming that the contextual approach-based interactive E-LKPD using Liveworksheets significantly influenced Arabic language learning outcomes for the As-Safar module.

N-Gain Test

N-Gain evaluation determines the relative improvement in student learning outcomes after product implementation. The calculation utilizes this established equation (Supriadi, 2021):

$$N_{Gain} = \frac{Skor\ Posttest - Skor\ Pretest}{Skor\ Ideal - skor\ pretest}$$

To interpret the relative effectiveness of the intervention, the calculated N-Gain values should be compared against the standardized categorization framework provided in the table below:

Table 7. Categories of Magnitude of Implementation of N-Gain Score

N-Gain Score	Interpretations
$0,70 \leq g \leq 1,00$	Significant improvement
$0,30 \leq g < 0,70$	Intermediate improvement
$0,00 < g < 0,30$	Minimal Improvement
$g = 0,00$	Null Effect
$1,00 < g < 0,00$	Negative Improvement

The efficacy interpretation of normalized gain scores requires application of the prescribed formula alongside these classification criteria (Supriadi, 2021):

$$N_{Gain} = \frac{Skor\ Posttest - Skor\ Pretest}{Skor\ Ideal - skor\ pretest} \times 100\%$$

Table 8. N-Gain Effectiveness Criteria

Percentage (%)	Interpretation
< 40	Low Impact
40-55	Minimally Effective
56-75	Medium
>76	Effective

Furthermore, the N-Gain test result can be viewed as less than:

Table 9. N-Gain Test Outcomes

\bar{x} Pretest	\bar{x} Posttest	N-Gain Score	Improved	% N-Gain
46,02	81,76	0,62	Medium	62,49%

The analysis revealed an N-Gain score of 0.62 (62.49%), which falls within the medium improvement category according to standard interpretation thresholds. The results showed that the effectiveness of students' understanding in learning Arabic by using interactive E-LKPD media based on Liveworksheet was classified in the medium category. This finding is in line with previous research (Abiyyah et al., 2025) which states that technology-based language learning aids, although combined with a contextual approach, have not been able to fully improve students' Arabic comprehension optimally.

However, E-LKPD can still be utilized as an alternative teaching material in learning Arabic at school. This is supported by the opinion of (Latifah et al., 2023), which states that teachers can use E-LKPD as one of the learning media options. The use of E-LKPD has several positive impacts, including creating more fun and interactive learning, providing opportunities for students to practice independently, and increasing student learning motivation. But, it should be noted that the effectiveness of E-LKPD depends on several supporting factors, such as: time constraints, where limited lesson duration reduces task completion rates, student confusion in responding to problems despite instructions, indicating a need for clearer task design, and uneven digital literacy, which creates disparities in independent usage. Thus, although its effectiveness has not yet reached the high category, E-LKPD deserves to be considered as one of the supporting media in Arabic language learning, with the caveat that.

Conclusion

The findings of this research and development demonstrate that: (1) the developed interactive E-LKPD Liveworksheet, using a context-based methodology for As-Safar material and structured using the ADDIE model, effectively enhances comprehension among Class XI-4 students; and (2) the product's validity, supported by high expert validation scores (media: 90%; material: 92.5%), confirms its classification as *Very Valid* and ready for immediate implementation without revisions. Furthermore, its effectiveness is substantiated by an N-Gain score of 62.49%, indicating *Moderate Effectiveness* in improving Arabic language acquisition.

Based on research and development, several weaknesses were found in media development. Therefore, some suggestions for improving further development are: the material added in the E-LKPD is more diverse and increases the interactive elements that are more varied, so that it can increase the effectiveness level to Effective.

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