



Alibbaa': Jurnal Pendidikan Bahasa Arab

Vol. 6 No. 2, July 2025

P-ISSN: 2721-1606 | E-ISSN: 2716-4985

doi: <http://xxx>

Empowering Arabic Reading Skills through Interactive Digital Worksheets: A Development Study Using Liveworksheet

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Abstract

Despite technological advancements in education, Arabic reading instruction at the elementary level largely relies on conventional methods that hinder student engagement and learning outcomes. This study aimed to develop Arabic reading instructional materials utilizing the Liveworksheet platform to foster active and engaging learning experiences for elementary students. The research employed the ADDIE model, encompassing the stages of Analysis, Design, Development, Implementation, and Evaluation. Conducted at SD Islam Sabilillah Jombang, this study involved 25 fifth-grade students as research participants. The findings demonstrate that the developed materials effectively enhanced students' reading skills, as indicated by the increase in the average pretest score from 54.04 to 78.08 in the posttest, with an N-Gain score of 0.65, categorized as moderate improvement. The interactive features of Liveworksheet, including drag and drop, multiple-choice, and short-answer activities, successfully promoted active student engagement. This study supports the integration of interactive digital media in Arabic language education and offers a practical solution to improve elementary students' reading skills.

Keywords: *Instructional Materials, Arabic Reading Proficiency, Liveworksheet, Elementary School, Interactive Digital Media*

Abstrak

Meskipun teknologi pendidikan terus berkembang, pembelajaran membaca bahasa Arab di tingkat sekolah dasar masih banyak bergantung pada metode konvensional yang menghambat keterlibatan siswa dan hasil belajar. Penelitian ini bertujuan mengembangkan bahan ajar membaca bahasa Arab berbasis platform Liveworksheet guna mendorong pengalaman belajar yang lebih aktif dan menarik bagi siswa sekolah dasar. Penelitian ini menggunakan model ADDIE yang mencakup tahapan Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi. Penelitian dilaksanakan di SD Islam Sabilillah Jombang dengan melibatkan 25 siswa kelas V sebagai partisipan penelitian. Hasil penelitian menunjukkan bahwa bahan ajar yang dikembangkan efektif meningkatkan keterampilan membaca siswa, ditunjukkan oleh peningkatan rata-rata nilai pretest dari 54,04 menjadi 78,08 pada posttest, dengan N-Gain sebesar 0,65 yang termasuk kategori peningkatan sedang. Fitur interaktif dalam Liveworksheet, seperti drag and drop, pilihan ganda, dan isian singkat, berhasil meningkatkan keterlibatan aktif siswa. Penelitian ini menegaskan pentingnya integrasi media digital interaktif dalam pembelajaran bahasa Arab dan menawarkan solusi praktis untuk meningkatkan keterampilan membaca siswa sekolah dasar.

Kata Kunci: *Materi Ajar Bahasa Arab, Keterampilan Membaca, Liveworksheet, Sekolah Dasar, Media Digital Interaktif*

Introduction

In foreign language learning, reading skills play a crucial role as the foundation for the development of other language skills, including writing, speaking, and listening.¹ Reading is not merely a technical process of recognizing letters and words; it is a cognitive process of understanding, interpreting, and utilizing information from texts.² In the context of Arabic language learning, reading skills (maharah qira'ah) hold a strategic position as they are directly related to the ability to comprehend authentic texts such as the Qur'an, Hadith, classical literature, and contemporary sources. In Indonesia, mastery of Arabic reading skills is not only regarded as a goal of language learning but also as a means of understanding religion, culture, and the broader Islamic intellectual tradition. Therefore, strengthening reading skills must be

¹ Allaithy, A., & Zaki, M. (2025). Evaluation of AI-generated reading comprehension materials for Arabic language teaching. *Computer Assisted Language Learning*, 1–33. <https://doi.org/10.1080/09588221.2025.2474037>

² Saiegh-Haddad, E. (2018). MAWRID: A Model of Arabic Word Reading in Development. *Journal of Learning Disabilities*, 51(5), 454–462. <https://doi.org/10.1177/0022219417720460>

supported by innovative and interactive learning media that align with the characteristics of today's digital generation.³

Based on preliminary observations conducted by the researcher at SD Islam Sabilillah Jombang, significant problems were identified concerning students' low reading proficiency in Arabic language learning. The learning process remains dominated by conventional methods, focusing on rote memorization of vocabulary, repetitive reading exercises, and monotonous text reading activities. This condition has led to a lack of active student participation during the learning process, as students tend to be passive, less enthusiastic, and unable to comprehend the content of the texts they read. They are only capable of technically reading letters or words without understanding the underlying meaning. Consequently, students' reading skills are more mechanical than functional and have yet to achieve the intended learning objectives.

On the other hand, teachers also face limitations in providing innovative learning media suited to the characteristics of 21st-century learners. The minimal utilization of digital learning media has made the learning process feel rigid and unengaging for students. Based on interviews, teachers expressed an urgent need for creative and engaging teaching materials that can actively involve students in the learning process. Teachers also hope for instructional materials that not only prioritize content quality but also offer more interactive, contextual, and digitally integrated presentations in line with the characteristics of students who are increasingly familiar with technology.

One solution to address these issues is the use of interactive digital learning media such as Liveworksheet. This web-based application allows teachers to transform conventional teaching materials into more engaging, interactive, and varied digital worksheets. Features such as drag and drop, multiple-choice questions, matching, audio responses, and automatic feedback encourage students to actively engage in reading activities while simultaneously increasing their learning motivation. Liveworksheet also provides flexibility for teachers to

³ Zulfa Tsalitsatul Muna, Nur Hidayah, Muhajir, Ashley Le Souef, & Alyssa Devaney. (2025). Mind Mapping as an Innovation in Reading and Writing Learning: A Study of Understanding Arabic Texts. *Alibbaa': Jurnal Pendidikan Bahasa Arab*, 6(1), 120–137. <https://doi.org/10.19105/ajpba.v6i1.15963>

monitor students' learning progress in real-time.⁴ With these characteristics, this medium is highly relevant for improving Arabic reading skills at the elementary school level as it effectively integrates technology, pedagogy, and active student engagement.

Previous studies have demonstrated the effectiveness of digital learning media in improving reading skills across various language learning contexts. Abdullatif and Alsubaie (2022) highlighted how the utilization of the digital platform *I Read Arabic* (IRA) positively impacted Arabic literacy learning for elementary students in Saudi Arabia. Through the UTAUT2 (*Unified Theory of Acceptance and Use of Technology 2*) approach, their study found that factors such as motivation, habit, ease of use, and accessibility influenced teachers' decisions to adopt the platform. These findings affirm that easily accessible interactive digital learning media can enhance student motivation and engagement in Arabic reading activities.⁵ Similarly, research by Soelistianto (2024) confirmed that the use of adaptive learning technology positively affects students' conceptual understanding. Such technology enables teachers to adjust learning materials more accurately to students' needs and difficulty levels. The findings also showed that student engagement and motivation increased through more active and interactive technology-based learning systems.⁶ Furthermore, Fitriyah et al. (2024) demonstrated that the use of E-LKPD based on Liveworksheet, combined with a scientific approach, effectively improved student learning outcomes, particularly in the topic of interactions between living things and their environment. Their study showed significant improvement from pretest to posttest, with a moderate effectiveness category based on N-Gain scores.⁷ Meanwhile,

⁴ Yusuf, F., & Ali, A. (2022). Exploring Students' Perception on using Live worksheet as Self-directed Learning of Listening Skills in Online Education. *Utamax : Journal of Ultimate Research and Trends in Education*, 4(3), 255–266. <https://doi.org/10.31849/utamax.v4i3.11449>

⁵ Ahlam Mohammed Al-Abdullatif and Merfat Ayesh Alsubaie, "Using Digital Learning Platforms for Teaching Arabic Literacy: A Post-Pandemic Mobile Learning Scenario in Saudi Arabia," *Sustainability* 14, no. 19 (September 2022): 11868, <https://doi.org/10.3390/su141911868>.

⁶ Soelistianto, F. A., Andrasgoro, D., Yusriati, Y., Mardiaty, M., & Fawait, A. B. (2024). The Impact of Adaptive Learning Technology on Improving Students' Concept Understanding. *Journal of Computer Science Advancements*, 2(3), 158–175. <https://doi.org/10.70177/jzca.v2i3.1176>

⁷ Fitriyah, I. J., Salamah, I. D., & Ramadhan, U. L. (2024). *The effectiveness of E-LKPD with a scientific approach using liveworksheets in improving learning*

Subekti and Lestyanto developed flipped classroom learning tools assisted by Liveworksheet for data presentation materials, which were proven valid and practical. Their findings indicated that these tools effectively enhanced students' skills in understanding and presenting data, with a learning mastery rate reaching 76.92%.⁸

Although previous studies have proven the effectiveness of digital learning media, including Liveworksheet, in various contexts such as science education, flipped classrooms, and adaptations in Arabic language learning, no studies have been found that specifically develop Arabic language teaching materials based on interactive Liveworksheet worksheets designed to improve reading skills (*maharah qira'ah*) for elementary students in Indonesia. This study offers a novelty by integrating the development of Arabic teaching materials with interactive digital technology through Liveworksheet, specifically focusing on reading skills as one of the fundamental skills in Arabic language education. Based on this background, this study aims to examine how Arabic teaching materials based on Liveworksheet are developed, assess their feasibility and practicality, and determine the extent to which these materials effectively enhance the reading skills of elementary school students.

Method

This study employed a Research and Development (R&D) approach with the aim of developing Arabic reading instructional materials based on Liveworksheet for elementary school students. The development model adopted in this study was the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model is widely utilized in instructional system design because of its systematic, flexible, and applicable stages (Branch, 2009).⁹ This model is considered highly relevant for the development of technology-based media and instructional materials as it integrates the processes of needs analysis, product design, development, implementation, and evaluation.

outcomes on the interaction of living things with the environment. 030040.
<https://doi.org/10.1063/5.0215207>

⁸ Subekti, A. R., & Lestyanto, L. M. (2024). *Developing the flipped classroom learning tools assisted by liveworksheet on the topic of data presentation.* 030020.
<https://doi.org/10.1063/5.0194449>

⁹ Robert Maribe Branch, *Instructional Design: The ADDIE Approach* (New York: Springer, 2009)

The research was conducted at SD Islam Sabilillah Jombang, involving fifth-grade students as the users of the instructional materials, Arabic language teachers as practitioners, and expert validators comprising subject matter experts, language experts, and media experts. Data collection techniques included observation, interviews, questionnaires, and tests. Observation was carried out to map the needs and the actual conditions of Arabic reading instruction in the field, while interviews were conducted to explore teachers' needs for innovative learning media. Questionnaires were used to obtain assessments of the materials' feasibility and practicality from validators, teachers, and students. Meanwhile, tests through pretests and posttests were administered to measure the effectiveness of the developed instructional materials. Research instruments consisted of observation sheets, interview guidelines, instructional materials validation sheets, practicality questionnaires, and Arabic reading skill tests. The collected data were analyzed both qualitatively and quantitatively. Qualitative data were analyzed descriptively to describe the development process and the validation results from the experts. Meanwhile, quantitative data were analyzed using the N-Gain formula to measure the improvement in students' reading skills before and after the implementation of the instructional materials.

As an assessment guideline, the N-Gain results were categorized into three levels of improvement, as shown in the following table:

Table 1. N-Gain Score Categories

N-Gain Score	Category	Interpretation
> 0.7	High	High level of improvement
$0.3-0.7$	Moderate	Moderate level of improvement
< 0.3	Low	Low level of improvement

A high category is assigned if the N-Gain score is greater than 0.7, a moderate category if the score ranges between 0.3 and 0.7, and a low category if the score is less than 0.3. These categories were used to determine the extent to which the Liveworksheet-based instructional materials were effective in enhancing elementary school students' Arabic reading skills.

Results and Discussion

The initial analysis of this study revealed that the teaching of Arabic reading skills (*maharah qira'ah*) at SD Islam Sabilillah Jombang still faces several challenges, particularly in terms of instructional

methods, learning media, and student engagement in the learning process. Based on classroom observations, the learning process remains dominated by conventional methods that focus on reading texts from textbooks collectively, copying vocabulary, and memorizing without contextual understanding. Learning activities are predominantly one-directional and teacher-centered, resulting in minimal active student involvement. In such teacher-centered learning environments, students tend to participate passively, merely rereading texts provided without truly comprehending the content or developing the ability to derive meaning holistically from the texts.¹⁰ This condition negatively impacts students' reading comprehension skills, which should be the primary objective of Arabic reading instruction at the elementary level.¹¹

Furthermore, the monotonous learning environment leads to a lack of enthusiasm and decreased student focus during lessons. Teachers tend to rely solely on limited instructional media, such as printed textbooks and whiteboards, without incorporating innovative or interactive digital technologies. The scarcity of engaging learning media that stimulate active student participation results in reading instruction that fails to provide an enjoyable learning experience.¹² This situation is reinforced by observations indicating low student participation when asked to comprehend texts, answer reading comprehension questions, or retell the content of simple texts. Consequently, Arabic reading instruction at this school requires an updated strategy, media, and approach that are more aligned with technological developments and the learning characteristics of today's students.

In-depth interviews with Arabic language teachers revealed that fifth-grade students require learning media that not only present reading texts but also offer a more interactive, visual, and enjoyable learning experience. Teachers reported that many students struggle to recognize

¹⁰ Faruq, U. (2023). Ta'lim al-Qira'ah li al-Nathiqin bi Ghair al-'Arabiyyah bi al-Nushush al-Ashliyyah al-Muhtawiyah 'Ala al-Tsaqafah al-'Arabiyyah. *Arabiyatuna: Jurnal Bahasa Arab*, 7(2 November), 389. <https://doi.org/10.29240/jba.v7i2.6621>

¹¹ Rosyadi, A. M., & Hidayah, M. S. (2022). Penerapan Metode Grammar Translation untuk Baca-Tulis di MA As-Sunniyyah Jember. *Al-Fusha: Arabic Language Education Journal*, 4(1), 30–36. <https://doi.org/10.62097/alfusha.v4i1.748>

¹² Verawati, A., Agustito, D., Pusporini, W., Utami, W. B., & Widodo, S. A. (2022). Designing Android learning media to improve problem-solving skills of ratio. *Advances in Mobile Learning Educational Research*, 2(1), 216–224. <https://doi.org/10.25082/AMLER.2022.01.005>

new vocabulary, comprehend meaning within sentence contexts, and draw conclusions from texts comprehensively. Teachers also acknowledged that students today are more likely to be engaged and motivated when learning utilizes technology-based media that allow for direct interaction with the materials. Therefore, students' needs extend beyond repetitive mechanical reading; they require instructional materials that facilitate active and varied reading practice through digital media.

More specifically, students need digital interactive worksheet-based learning media that include a variety of reading activities such as matching words with pictures, completing sentences, selecting correct answers, and reading texts accompanied by engaging visual activities. Such learning media are deemed to have the potential to facilitate independent reading practice, provide instant feedback, and offer a more flexible learning space, whether at school or at home. Additionally, teachers emphasized the importance of media that simplify the evaluation process, enabling teachers to monitor students' learning progress in real-time. Considering these needs, teachers viewed the Liveworksheet platform as highly relevant because it provides interactive, practical learning media aligned with the learning characteristics of elementary school students who are more responsive to digital technology.

Based on the analysis of the initial learning conditions and students' needs, it can be concluded that the development of instructional materials based on Liveworksheet represents a strategic step to address the challenges of Arabic reading instruction at this school. In addition to enhancing student engagement, this medium also offers flexibility for teachers in designing more varied and structured learning activities. Therefore, the subsequent stages of this study focused on the design process, integrating Arabic reading content with the interactive features provided by Liveworksheet, as well as the development, implementation, and evaluation processes.

Designing Instructional Materials Using Liveworksheet

The design stage of this research was carried out systematically, referring to the results of the previously conducted needs analysis. The instructional materials were developed to produce Arabic reading learning media based on Liveworksheet, which allows students to engage more actively, enjoyably, and interactively, both at school and at home.

The design process involved several essential stages implemented gradually until a validated instructional material product was ready.

The initial step in this design process began with creating a cover design for the instructional materials using the supporting application Canva. The cover was designed to appear more visually appealing and aligned with the visual characteristics of elementary school students. Upon completion of the cover, the researcher proceeded to prepare the table of contents and then determined the learning outcomes and objectives in accordance with the applicable curriculum, particularly the Merdeka Curriculum. Subsequently, the content was systematically organized by dividing the instructional materials into several chapters and sub-chapters containing simple reading exercises based on students' daily life contexts.

The next stage involved compiling and adapting instructional content from existing textbooks, focusing on short reading texts, thematic vocabulary, and reading comprehension exercises developed through various activities. After compiling the content, the researcher designed evaluation and practice exercises. These exercises included interactive activities such as multiple-choice questions, true-false statements, short-answer questions, matching words with images, sentence construction, and audio-based questions. All materials and exercises were then uploaded to the Liveworksheet platform to be converted into interactive digital worksheets that students could complete directly through digital devices. Using the available features, the researcher also adjusted the visual layout, question formats, and automatic feedback to help students receive immediate responses to their answers.

These instructional materials were designed not only to enable students to read texts but also to engage actively in answering questions, matching words, and constructing sentences directly on their screens. This learning activity was intended to make the process more engaging, encourage greater focus, and increase students' involvement in learning Arabic reading skills. Liveworksheet was chosen because it offers a more dynamic learning experience, provides immediate feedback, and is easily accessible anytime and anywhere as long as there is an internet connection.

In terms of format, these instructional materials were developed in two forms: digital format (interactive e-book based on Liveworksheet) and print format (PDF), both of which could be utilized according to the needs of the learning context. The primary distinction between this

product and previous conventional instructional materials lies in its interactivity, accessibility flexibility, and varied evaluation features. These features make the materials not only relevant for teachers in managing the learning process but also enable students to engage in self-directed learning.

All instructional content was designed to include visually appealing elements, simple language usage, and exercises relevant to the learning context of elementary students. The preparation of these materials was aimed at optimizing reading skills, enriching vocabulary, and enhancing students' comprehension of reading texts. This design process served as the initial blueprint that would continue through the development and evaluation stages.

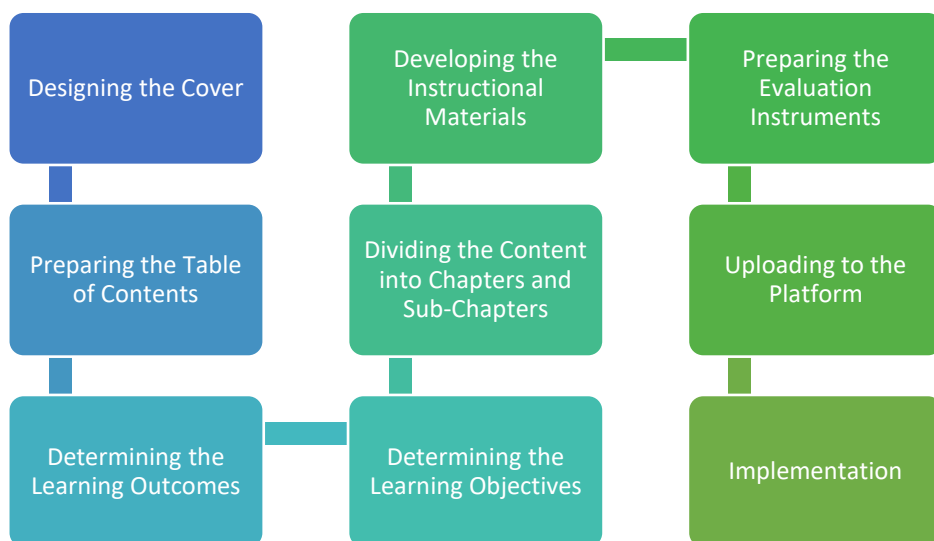


Figure 1. Stages of Instructional Material Design

As illustrated in the figure above, the instructional materials design process was carried out systematically through interconnected stages. The process began with designing the cover and continued through uploading the content to the platform, accompanied by adjustments to the visual layout and interactive features. Each stage was deliberately structured to ensure the resulting instructional materials are relevant, engaging, and aligned with the learning needs of elementary school students.

Implementation and Evaluation

The implementation of the Liveworksheet-based Arabic reading instructional materials in this study was carried out through several structured trial phases. The sampling method employed was purposive sampling, with a total of 25 fifth-grade students from SD Islam Sabilillah Jombang as research participants. The trial was conducted in three stages: small group testing, large group testing, and field testing. Each stage aimed to assess the readiness, practicality, and effectiveness of the developed instructional materials. All implementation activities took place from April 8 to April 22, 2025.

During the small and large group testing phases, the assessment focused on the practicality of using the instructional materials. Data were collected through questionnaires distributed to students after the learning sessions. The results indicated that most students responded positively to the Liveworksheet-based instructional materials. Students perceived the materials as visually appealing, featuring varied interactive elements and providing ease of access both at school and at home. Moreover, teachers reported that these materials were highly beneficial in supporting the Arabic reading instruction, particularly due to the media's automatic feedback feature and its ability to facilitate the evaluation of students' learning outcomes in real time.

The subsequent stage was field testing, which aimed to evaluate the overall effectiveness of the instructional materials. At this stage, data were gathered through direct observations, teacher interviews, student satisfaction questionnaires, and reading skill tests administered through pretests and posttests. This evaluation was designed to measure the extent to which the instructional materials effectively supported the improvement of students' reading skills after being implemented in classroom instruction.

The evaluation process involved two types of assessments: formative and summative evaluations. The formative evaluation was conducted from the analysis stage through product development to ensure the produced materials met eligibility standards. The summative evaluation was conducted after classroom implementation, with the primary goal of assessing the effectiveness of the Liveworksheet-based instructional materials in achieving learning objectives, specifically in improving elementary students' Arabic reading skills.

Quantitative data analysis was conducted to measure the instructional materials' effectiveness on student learning outcomes. Normality tests were performed using the Kolmogorov-Smirnov and

Shapiro-Wilk tests¹³, which showed significance values greater than 0.05, indicating that the data were normally distributed. Furthermore, the homogeneity test showed a significance value of 0.508 (> 0.05), confirming that the data were homogeneous. Based on the results of these tests, data analysis proceeded with the Independent Sample T-Test.

The results of the Independent Sample T-Test indicated a significance value (2-tailed) of 0.000 (< 0.05), demonstrating a significant difference between the pretest and posttest results. These findings suggest that the use of Liveworksheet-based instructional materials had a significant positive impact on improving the Arabic reading skills of elementary school students.

To determine the level of effectiveness of the developed instructional materials, N-Gain Score calculations were performed, as shown in the following table:

Table 2. Pretest and Posttest Score

Test Type	Mean	Minimum Score	Maximum Score
Pretest	54,04	41,00	74,00
Posttest	78,08	60,00	96,00

From the table above, it is evident that the average pretest score of students before using the Liveworksheet-based materials was 54.04, with a minimum score of 41.00 and a maximum of 74.00. After the implementation of the materials, the average posttest score increased to 78.08, with minimum and maximum scores of 60.00 and 96.00, respectively. Based on the N-Gain calculation, an average improvement score of 0.65 was obtained, which falls into the moderate improvement category. These results indicate that the developed instructional materials were effective in enhancing elementary students' Arabic reading skills.

These findings further demonstrate that the Arabic reading instructional materials developed through this study were effective in improving students' reading abilities, including reading comprehension, vocabulary recognition, and the ability to construct simple contextual sentences. In addition, the implementation of this interactive digital learning media provided a more enjoyable learning experience and encouraged active student participation, aligning with the demands of

¹³ Nornadiah Mohd Razali, & Bee Wah Yap. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests . *Journal of Statistical Modeling and Analytics*, 2(1), 21–33.

21st-century education. Thus, the results of this implementation and evaluation confirm that the developed instructional materials meet the criteria of feasibility, practicality, and effectiveness to support Arabic reading instruction for elementary school students. These findings provide strong grounds to conclude the success of developing Liveworksheet-based instructional materials in improving Arabic reading skills at the elementary level.

Discussion

The findings of this study demonstrate that the Liveworksheet-based Arabic reading instructional materials developed in this research have a positive impact on improving the learning outcomes of elementary school students. This is evidenced by the increase in the average pretest score from 54.04 to 78.08 in the posttest, with an N-Gain score of 0.65, which falls into the moderate improvement category. These results indicate that the use of interactive technology-based learning media such as Liveworksheet can make a significant contribution to supporting reading skills, particularly in the context of Arabic language learning at the elementary level, which is still predominantly characterized by conventional teaching methods.¹⁴

The effectiveness of the developed instructional materials is closely related to the characteristics of Liveworksheet, which optimally integrates visual, audio, and interactive elements in the classroom learning process. In Arabic language learning, these elements play a crucial role as they assist students in recognizing word forms (*rasm al-kalimah*), pronunciation (*lafzh*), and understanding the meaning of words within sentence contexts.¹⁵ Visualization helps students clearly identify letters, vocabulary, and sentence structures.¹⁶ Meanwhile, audio

¹⁴ Prawijaya, S., Rozi, F., & Siregar, A. (2022). *Online learning platform using Canva: An alternative experience to optimize the learning process in the class*. 140002. <https://doi.org/10.1063/5.0114111>

¹⁵ Dewi, I., Ahmad Nurcholis, Izzatul Laila, Juan Acevedo, & Moumen El-Sayed. (2025). Curiosity-Driven Learning in Arabic: A Case Study on the "Inquiring Minds Want to Know" Approach. *Alibbaa': Jurnal Pendidikan Bahasa Arab*, 6(1), 42–64. <https://doi.org/10.19105/ajpba.v6i1.17881>

¹⁶ Maimunah, I., Sutaman, S., Taufiqurrochman, R., Siregar, H. H., & Alaoui, M. M. I. (2022). SYNCHRONOUS ARABIC LEARNING BASED ON SOCIOCULTURAL THEORY: NEW TRENDS IN ARABIC LEARNING AT UNIVERSITY. *Arabi: Journal of Arabic Studies*, 7(2), 162–172. <https://doi.org/10.24865/ajas.v7i2.480>

features facilitate accurate pronunciation modeling, which is vital in foreign language learning such as Arabic.¹⁷ Beyond that, interactivity encourages active student engagement through activities such as answering questions, matching words, and constructing sentences directly.¹⁸ This is highly relevant to the nature of Arabic language learning, which requires repeated practice and active cognitive involvement so that students not only memorize but also comprehend the contextual use of language.¹⁹

Various features such as drag and drop, multiple choice, short answer, word-picture matching, and interactive audio provide a diverse learning experience that encourages students to actively participate in the learning process. This medium does not merely deliver materials in a one-way manner but allows students to interact directly with the content through exercises designed to stimulate reading comprehension. Such interaction provides opportunities for students to actively construct their own understanding of the learning material rather than passively receiving information.²⁰ Through activities like matching pictures with words, completing sentences, selecting correct answers, or constructing sentences within a given context, students are encouraged to think critically, recall information, and process it more deeply.²¹

¹⁷ Boukthir, K., Qahtani, A. M., Almutiry, O., Dhahri, H., & Alimi, A. M. (2022). Reduced annotation based on deep active learning for arabic text detection in natural scene images. *Pattern Recognition Letters*, 157, 42–48. <https://doi.org/10.1016/j.patrec.2022.03.016>

¹⁸ Haniff Mohd Tahir, M., Mohd Ariff Albakri, I. S., Haimi Mohd Adnan, A., Syafiq Ya Shaq, M., & Mohamad Shah, D. S. (2020). The Application of Visual Vocabulary for ESL Students' Vocabulary Learning. *Arab World English Journal*, 11(2), 323–338. <https://doi.org/10.24093/awej/vol11no2.23>

¹⁹ Khuluq, M., Hasanah, M., Muasshomah, M., & Imamah, N. (2024). Mobile-Assisted Language Learning Apps: The Analysis of Duolingo. *Al-Ta'rib : Jurnal Ilmiah Program Studi Pendidikan Bahasa Arab IAIN Palangka Raya*, 12(2), 229–246. <https://doi.org/10.23971/altarib.v12i2.8806>

²⁰ Gharaibeh, M., & Alhassan, A. A. (2023). Role of teachers in teaching Arabic letters to young children of UAE: Exploring criteria of Arabic letters teaching. *Cogent Education*, 10(1). <https://doi.org/10.1080/2331186X.2023.2191392>

²¹ Huseinović, L. (2023). The Effects of Gamification On Student Motivation And Achievement In Learning English As A Foreign Language In Higher Education. *MAP Education and Humanities*, 4(1), 10–36. <https://doi.org/10.53880/2744-2373.2023.4.10>

Moreover, this direct interaction supports the principle of active engagement, a core element in modern learning theories.²² The more frequently students are directly involved in varied learning activities, the greater their opportunity to understand the material comprehensively.²³ Intensive interaction with the media also enhances information retention, as students experience learning not only through reading or listening but also through hands-on practice that simultaneously involves cognitive and psychomotor aspects.²⁴ Thus, Liveworksheet-based media not only enriches students' learning experiences but also effectively enhances reading comprehension in a gradual and systematic manner.

Active student involvement in learning is a crucial factor in strengthening reading skills.²⁵ Through activities that require direct participation, such as word matching, completing answers, or constructing sentences via Liveworksheet, students are implicitly trained to process information more deeply. These activities provide stronger cognitive stimulation compared to conventional learning methods, which tend to be passive and monotonous.²⁶ Learning that integrates visual, audio, and interactive elements can better capture students' attention, making them more focused and enthusiastic in participating in Arabic reading lessons. Through such active involvement, students are also encouraged to be more confident in testing their understanding of the

²² Soelistianto, (2024). The Impact of Adaptive Learning Technology on Improving Students' Concept Understanding. *Journal of Computer Science Advancements*, 2(3), 158–175.

²³ Ghannam, J. (2019). Enhancing independent learning competence and grammar language learning strategies. In *Professional competencies in language learning and teaching* (pp. 31–40). Research-publishing.net. <https://doi.org/10.14705/rpnet.2019.34.912>

²⁴ Shortt, M., Tilak, S., Kuznetcova, I., Martens, B., & Akinkuolie, B. (2023). Gamification in mobile-assisted language learning: a systematic review of Duolingo literature from public release of 2012 to early 2020. *Computer Assisted Language Learning*, 36(3), 517–554. <https://doi.org/10.1080/09588221.2021.1933540>

²⁵ Yasin, Z., Anwar, H., & Luneto, B. (2021). Multimedia PowerPoint-Based Arabic Learning and its Effect to Students' Learning Motivation: A treatment by level designs experimental study. *International Journal of Instruction*, 14(4), 33–50. <https://doi.org/10.29333/iji.2021.1443a>

²⁶ Zaimah, N. R., Risti Kamila Wening Estu, Hidayah, S. F., Hadi, S., & Aiden Button. (2024). Harnessing Gemini for Arabic Mastery: Educators' and Learners' Views. *Alibbaa': Jurnal Pendidikan Bahasa Arab*, 5(2), 166–188. <https://doi.org/10.19105/ajpba.v5i2.14808>

presented texts.²⁷ In the process, teachers can directly monitor how students complete the exercises, provide feedback, and ensure that each student correctly understands the instructions. Using this medium under teacher supervision helps minimize comprehension errors and ensures that learning objectives are optimally achieved.²⁸ In a structured and controlled classroom environment, the implementation of Liveworksheet-based instructional materials has proven more effective in systematically enhancing students' reading skills.

Nevertheless, this study was conducted at a single elementary school with a relatively small sample size of 25 students from one class. This limitation naturally affects the generalizability of the findings to broader contexts, whether geographically or across different types of schools. Moreover, this study focused solely on reading skills and did not examine the influence of these instructional materials on other essential language skills, such as listening, writing, or speaking, which are also crucial in Arabic language learning. Therefore, these findings should be interpreted within the limited scope of this study.

Despite these limitations, this study offers significant contributions both theoretically and practically. Theoretically, it affirms the importance of integrating technology in language learning, particularly reading skills, as a means to promote active student engagement through relevant and interactive media. Practically, the findings provide an alternative learning medium for Arabic language teachers to improve students' reading skills through the use of accessible and applicable technology like Liveworksheet. Accordingly, the results of this study are expected to serve as a reference for the future development of similar instructional materials, not only for reading skills but also for other language competencies, and to encourage broader utilization of technology in Arabic language education at the elementary level.

²⁷ Yusuf, (2022). Exploring Students' Perception on using Live worksheet as Self-directed Learning of Listening Skills in Online Education.

²⁸ Hadi, N., Alvina, N., & Khaled Radhouani. (2024). Ta'zizu Dâfi'iyati Thullâbi Riyâdh al-Athfâl li Tathwîri Mahârât al-Lughah al-'Arabiyyah al-Syafawiyyah min Khilâli Barâmiji al-Ta'lîm al-Mukatstsaf. *Alibbaa': Jurnal Pendidikan Bahasa Arab*, 5(2), 189–214. <https://doi.org/10.19105/ajpba.v5i2.12195>

Conclusion

This study concludes that the Liveworksheet-based Arabic reading instructional materials developed in this research have been proven effective in improving the learning outcomes of elementary school students. These instructional materials were systematically designed and implemented in a structured classroom setting under teacher guidance. The research findings indicate a significant improvement in students' reading abilities, as reflected in higher posttest scores compared to pretest results, with an N-Gain score of 0.65, categorized as moderate improvement. This learning media successfully facilitated active student engagement through interactive, varied, and age-appropriate exercises aligned with the learning characteristics of elementary students. As a practical contribution, this study highlights the importance of technological innovation in instructional materials for Arabic language learning, particularly for reading skills. For future research, it is recommended to examine the effectiveness of Liveworksheet-based materials in supporting other Arabic language skills, such as listening, writing, and speaking, or at various educational levels. Further studies may also broaden the scope of implementation with larger sample sizes to obtain a more comprehensive understanding of the effectiveness of these instructional materials.

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