

Implementation of Liveworksheets Media to Increase Students' Motivation to Learn Arabic

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Abstract: Islamic-based character education is an important pillar in Indonesia, aiming to form students who have high morality and religious attitudes. The main goal of learning in schools is to create a pleasant atmosphere, which can attract the interest and enthusiasm of students, and motivate them to learn well. The challenges of Islamic Religious Education in the digital era are increasing, with technological innovations changing the learning paradigm. the development of liveworksheet learning media is a relevant and innovative alternative. This media not only facilitates interactive learning, but also allows the integration of Islamic values through contextual exercises that can be accessed independently by students. This article aims to implement liveworksheet media to increase students' learning motivation. The research conducted was a development research with the ADDIE approach involving 29 students who had high, medium and low motivation, data analysis researchers used N-Gain analysis techniques. The results showed that there was a significant increase in student learning motivation after the application of Liveworksheets media. Before the use of the media, the average score of students' learning motivation was 4.48, which was classified in the good category. This increase was supported by observation and preliminary research which showed that the use of interactive media can provide a more interesting learning experience.

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Introduction

Education is a process that aims to develop the potential of Human Resources (HR) through various structured learning activities. One of the main objectives of learning activities in the school environment is to create a pleasant atmosphere, which can not only attract the interest and enthusiasm of students, but also be able to motivate them to continue learning well and enthusiastically. A positive and pleasant learning atmosphere has a significant impact on achieving optimal learning achievement. Today, we live in the 21st century, an era characterized by the exponentially rapid development of science and technology (science and technology). To be able to keep up with the rapid progress of science and technology, it is important for every individual to have science literacy, including in the world of work. Many of today's jobs and professional tasks require a high level of skill, which requires people to be able to learn effectively, think critically, think creatively, make

decisions, and solve problems. A deep understanding of science and the scientific process contributes significantly to the development of these skills. (Pubian, 2022).

A study conducted by Sukana (2024) revealed that challenges in Islamic Religious Education in 2024 will reach their peak in the digital era, where technological innovations are constantly changing the existing learning paradigm. In the context of the Industrial Revolution 4.0, the new civilization of mankind is determined by the ability to master and utilize science, technology, and information. These three aspects are no longer limited by differences in the dimensions of space and time, thus creating new life scenarios that need to be explored along with scientific advances. Technological advances have accelerated the process of globalization and demand the rearrangement of human life in various aspects. Therefore, Islamic Religious Education supervisors are expected to play a strategic role in dealing with the changes that occur. Challenges arise from the need to harmonize traditional teaching methods with modern technology, while still maintaining religious and ethical values in a digital learning environment.

Islamic-based character education is one of the important pillars in the education system in Indonesia. The purpose of this character education is to form students who have high morality, a sense of responsibility, and a religious attitude in accordance with Islamic teachings. In today's digital era, challenges in education management, especially in the concept of Islamic-based education, are increasingly complex. Therefore, innovation in education management is needed to ensure that Islamic values can be well embedded in students (Mustoip, 2023).

Arabic language education plays a very important role in maintaining and developing the cultural heritage and spirituality of Muslims. However, in this modern era, Arabic education faces various challenges that may affect its future prospects. Factors such as technological developments, social changes and economic dynamics affect the way Arabic is taught and learned (Qolbi, 2024).

Arabic language education is one of the most important subjects in Indonesia, especially in Islamic-based schools, including Ar-Raihan Islamic Science-Tech School. As a language used in Islamic worship and science, Arabic language skills are needed by students to understand religious teachings more deeply. However, in reality, many learners experience difficulties in learning Arabic, both in terms of understanding the material, speaking skills, and motivation to continue learning.

Learning motivation is a very important element in the educational process, because it functions as a driver, driver, and determinant of the direction of students' learning behavior (Imam, 2018). Without strong motivation, the learning process will run less effectively, it can even cause students to lose interest and enthusiasm in participating in learning. In the context of learning Arabic, learning motivation greatly affects the level of participation and success of students in understanding the material taught. Arabic, which has a different structure and writing system from everyday language, requires high effort and commitment to master. Therefore, learners who have high motivation tend to be more able to overcome difficulties and show better learning results than learners who have low motivation. A study conducted by Hilmi and Nurhayati (2024) found a positive relationship between learners' learning motivation and their achievement in Arabic. The results show that highly motivated learners tend to be better able to deal with difficulties and obtain better learning outcomes compared to those with low motivation.

Pre-research results conducted by researchers, through the distribution of research needs questionnaires to 15 randomly selected students in class XI found the following data:

Table 1, Pre-research Results

No	Indicator	Total
1	Learning Methods in an Islamic Context	41,67
2	Influence of Islamic Education Environment	31,67
3	Engaging and Interactive Learning	31,11
4	Assessment and Feedback	35,56
5	Learner Engagement in Learning	31,11
6	Learning Experience	26,67
Total		32,96

Source: adoption (Fadilah, 2023)

Based on the results of the pre-research, it was found that 32.96% of Arabic language learning at Ar-Raihan Islamic Science-Tech High School had decreased, especially in the indicators of interesting and interactive learning contexts, the influence of Islamic educational environments, and the involvement of students in the learning process which resulted in 31.11%. These indicators describe the learning conditions at Ar-Raihan Islamic Science-Tech School. The results of the interview also found the fact that Arabic language learning at Ar-Raihan High School still tends to be traditional and does not involve students actively. This has an impact on the low interest and motivation of students to learn. Learning that focuses more on the lecture method and text exercises, without utilizing technology or interesting learning media, results in students feeling bored and less motivated. Non-interactive Arabic learning makes learners feel not fully involved in the learning process, so they are less enthusiastic and less developed in understanding the material in depth.

In the context of SMA IT Ar-Raihan Science-Tech School, the development of interactive learning media based on Liveworksheet for Arabic language subjects is a strategic step that needs to be taken. As a school that carries the concept of science and technology integration, IT Ar-Raihan High School has great potential to optimize the use of technology in the learning process. Moreover, the 11th grade students who are the target of this research are the digital generation who are accustomed to the use of technology in their daily lives. However, it needs to be realized that the successful implementation of interactive learning media does not only depend on the sophistication of technology alone. Another important factor is the readiness and competence of teachers in managing the media effectively as well as the support of a conducive learning environment.

Teachers as learning facilitators must have adequate pedagogical and technological skills to design, implement and evaluate interactive media such as Liveworksheet. Without a good understanding of the platform's features and potential, it can lose its strategic value and even become an additional burden in the learning process (Koehler, Mishra, & Cain, 2017; Wahyuni & Surjono, 2018). Learners' active engagement in using interactive media is also an important indicator, especially in achieving the goals of learning outcomes and motivation. When learners are actively engaged, whether through doing exercises, exploring media features, or providing feedback, they are not only recipients of information, but also independent and reflective learning subjects (Zainuddin & Attaran, 2016; Al-Azawei, Parslow, & Lundqvist, 2017). This kind of engagement can increase concentration, a sense of ownership of the learning process, and intrinsic motivation, which in turn has a positive impact on the achievement of learning outcomes.

To overcome the existing problems, innovations in learning are needed that can increase student involvement and foster motivation to learn. One solution that can be implemented is to develop technology-based interactive Learner Worksheets (LKPD). One of the platforms that can be used to achieve this goal is Liveworksheets, a web-based learning application that allows teachers and learners to interact with the material directly through a worksheet format that can be filled in digitally.

Research conducted by Hasanah (2023) suggests that student worksheets are sheets used by teachers in creating student involvement or activity in teaching and learning activities. Furthermore, LKPD is one of the teaching materials designed by the teacher and consists of material, instructions for working on problems, and practice questions (Dewi, 2022). The development of LKPD is expected to be able to facilitate the development of the 21st century in the form of 4C skills.

Yulianti, (2024) defines LKPD as having several advantages, namely students can learn according to their respective abilities, students can repeat material in print, the combination of text and images on printed pages can add attractiveness and facilitate understanding of the information presented, students can actively answer questions and exercises arranged, the material in LKPD can be produced economically and distributed.

In this context, the development of interactive LKPD based on Liveworksheets for Arabic language subjects at SMA IT Ar-Raihan Islamic Science-Tech School is expected to bridge the existing learning motivation problems. With the growing use of technology, the utilization of platforms such as Liveworksheets can be a significant first step to create more enjoyable and effective Arabic language learning for students. Therefore, this research aims to find out the implementation of learning motivation for students in class XI of Ar-Raihan Islamic Tech School.

Research Method

This research is a development research using the ADDIE approach (Analysis, Design, development, implementation and evaluation). The research was conducted at SMA Ar-Raihan Islamic Science Tech School Bandar Lampung involving 29 research samples with high and low motivation levels in Arabic language subjects with data techniques using observation sheets. Data analysis used in this study researchers used the effectiveness test / N gain test analysis technique to see if there was no change in learning motivation from the implementation of learning activities carried out using liveworksheet media.

Result and Discussion

This study aims to explore the potential of Arabic learning media development at Ar-Raihan Islamic Science-Tech School located in Lampung City. This school has a vision to integrate Islamic education with science and technology, and focuses on digital-based learning. Observations were made of the facilities and infrastructure that support the learning process, which includes computer laboratories, internet connections, and other facilities.

The observation results show that the facilities and infrastructure in this school are adequate. The classrooms are in good condition, the computer laboratory is complete with the latest software, and the internet access is stable. However, there are some shortcomings, such as the lack of Arabic supporting book collections and the absence of interactive learning software that can optimally support Arabic learning. The school has been using the independent curriculum since 2022, with an allocation of 45 minutes per lesson hour. Currently, the available textbooks are only printed books, and there are no digital media-

based textbooks. The research also involved interviews and document analysis to understand the learners' characteristics. The results of the analysis show that although learners show interest in learning Arabic, they experience difficulties in understanding vocabulary and sentence structure, which is caused by the lack of interesting learning media.

Based on the research results, Ar-Raihan Islamic Science-Tech High School has great potential to develop more innovative and interactive Arabic learning media. Although the learning facilities are quite adequate, the lack of supporting books and digital media that support interactive learning needs to be considered. Media development such as Liveworksheets is expected to increase students' learning motivation by presenting Arabic language materials more interactively and in accordance with their needs in the digital era.

The results of the research analysis, as follows:

1. Analisis

Needs analysis in Arabic language learning in class XI, focusing on learner motivation and learning methods used. Through field studies and literature studies, data obtained from observations, interviews, and questionnaires show that learner motivation tends to be low. Observations indicated that conventional methods dominated by teacher lectures cause learners to become passive listeners, which leads to boredom and lack of active participation. For example, when learning grammar, learners only take notes without understanding the material in depth. The analysis also revealed that the need for technology-based learning media is very high, given the characteristics of today's digital generation who are more interested in learning that involves digital tools. The use of interactive learning applications and online platforms is proposed as a solution to increase motivation. By utilizing technology, teachers can present more interesting materials, such as learning videos and interactive quizzes.

Initial observation data showed that students' learning motivation in learning Arabic had an average percentage of 47.54%. The learner engagement indicator scored the lowest (43.00%), while assessment and feedback recorded the highest result (54.02%). This finding indicates the need to develop more interactive learning methods to increase learners' motivation and engagement. Material analysis is conducted to ensure the suitability of learning content with curriculum objectives and learner needs. This process aims to avoid repetition of material and ensure that the material developed is interesting and relevant. In addition, the analysis of learners' characteristics through questionnaires shows that although learners have an interest in Arabic, they have difficulty in understanding vocabulary and sentence structure, and feel that learning tends to be monotonous.

Most learners showed a preference for interactive and visual digital learning media. They are more motivated if the material is presented in a practical way, enabling independent and collaborative learning. This finding confirms the need for innovation in learning media, especially in the form of interactive digital, to increase learners' learning effectiveness and motivation in Arabic language subjects.

2. Design

The design stage in product development or learning media is a crucial component that involves researchers in developing designs based on the previous needs analysis. At this stage, researchers convert the needs of users, both learners and educators, into a concrete design, both in terms of visual and functional.

Steps in the Design Stage, described as follows:

a. Setting learning objectives

Learning objectives are set based on the basic competencies to be achieved, with a focus on increasing learners' motivation and engagement in learning Arabic. In this context, basic competencies include learners' ability to memorize vocabulary, speak, read, understand grammar, and write in Arabic. The Pancasila Learner Profile is also referenced, emphasizing values such as diversity, independence, and critical thinking.

b. Selection of learning materials and content

The selection of materials is done by considering the context of learning at the high school level, especially class XI, with a focus on the material "mubtada' and khabar". This material was chosen because it is a fundamental component in the structure of nominal sentences in Arabic. The reasons for this selection include:

- 1) The material on mubtada' and khabar is the basis for mastering more complex sentence structures at an advanced level.
- 2) Appropriate level of difficulty. Observations and interviews show that many learners have difficulty in distinguishing and placing mubtada' and khabar appropriately, so media is needed to support their understanding.
- 3) The media developed is tailored to the characteristics of the learners and the existing facilities. In this study, Liveworksheet media was chosen because it can increase learners' active involvement through interactive features such as drag-and-drop, matching, and audio.
- 4) The initial draft of the product is developed based on the needs analysis, learners' characteristics, and the results of observations and interviews. This stage includes designing learning content, interactive activities, and selecting formats and features that are suitable for Liveworksheets media. The materials developed are tailored to Arabic learning objectives and the applicable curriculum, taking into account aspects of engagement and visual appeal to increase learner motivation. The initial draft includes interactive digital worksheets such as multiple choice, short fill-in, word matching and audio/image-based exercises, designed to support the understanding of vocabulary and sentence structure in a fun context. This draft will go through a validation stage before being piloted..

The liveworksheet prototype in this implementation



Figure 1: Development prototype view

3. Development

Once product development is complete, the next important step is to conduct prototype testing by involving experts for validation. This process includes three groups of experts: media/design experts, linguists, and subject matter experts, each playing an important role in ensuring the product meets technical standards and is relevant and effective in its context of use.

a. Material Expert Assessment

Based on the assessment of the material experts, an average score of 4.8 on a scale of 1-5 was obtained, which indicates that the developed material is very feasible to be used in learning Arabic. The aspects assessed include the suitability of the material with the basic competencies, the accuracy of the content in accordance with Arabic language rules, as well as the depth and breadth of the material in accordance with the level of students. In addition, the material is also considered to have integration of relevant cultural/ Islamic values, as well as the use of language that is easy to understand. Although the assessment results were very positive, the material experts provided some notes and suggestions for minor improvements to improve readability and clarity of concepts.

b. Linguist Assessment

Linguists gave an average score of 4.4 on a scale of 1-5, which also indicates that the feasibility of language in learning materials has met good criteria. The assessment includes clear sentence structure, readability of the text, appropriateness of terms with the ability level of learners, and adherence to spelling and punctuation rules. Although the assessment results are very good, there are minor improvement suggestions given to further improve the quality of the materials.

c. Media/Design Expert Assessment

Media/Design Expert Assessment From the media/design expert assessment, an average score of 4.6 from a scale of 1-5 was obtained, which indicates that the learning media has met the eligibility criteria in terms of visual design, layout, and ease of use. The media is declared very feasible to be used in learning activities, although there are some suggestions for improvement that need to be considered.

Overall, the assessment results from the three groups of experts indicate that the developed product has met high quality standards and is suitable for use in the context of Arabic language learning. The suggestions given by the experts were generally minor and aimed at improving the quality of the material, as well as enhancing the learning experience for students.

4. Implementation

Product testing was designed in four meetings, with each meeting focused on applying and evaluating the effectiveness of the developed product. Each meeting session has specific learning objectives, and is integrated with evaluation instruments to measure competency achievement, learner engagement, and feedback on product clarity and usefulness. The data collected during this test is used to analyze the practicality and effectiveness of the product, as well as the basis for determining the impact of the development media on students' learning motivation.

The results of the implementation of liveworksheet media development research in the experimental class are known as follows:

Table 2 Data on learning motivation of class XI

No	Respondents	Beginning of Learning		End of Learning	
		Average	Category	Average	Category
1	Respondents 1	2,15	Not good	4,4	Good
2	Respondents 2	2,85	Not good	4,4	Good
3	Respondents 3	3,15	Good enough	4,5	Good
4	Respondents 4	2,35	Not good	4,4	Good
5	Respondents 5	2,5	Not good	4,4	Good
6	Respondents 6	3,65	Good enough	4,25	Good
7	Respondents 7	3,05	Good enough	4,2	Good
8	Respondents 8	2,45	Not good	4,3	Good
9	Respondents 9	2,4	Not good	4,2	Good
10	Respondents 10	2,65	Not good	4,4	Good
11	Respondents 11	3	Good enough	4,7	Good
12	Respondents 12	2,6	Not good	4,6	Good
13	Respondents 13	2,5	Not good	5	Very good
14	Respondents 14	2,4	Not good	4,7	Good
15	Respondents 15	2,55	Not good	4,55	Good
16	Respondents 16	2,85	Not good	4,7	Good
17	Respondents 17	2,9	Not good	4,45	Good
18	Respondents 18	3,05	Good enough	4,45	Good
19	Respondents 19	2,2	Not good	4,6	Good
20	Respondents 20	2,35	Not good	4,7	Good
21	Respondents 21	2,5	Not good	4,6	Good
22	Respondents 22	3,15	Good enough	4,8	Good
23	Respondents 23	3,4	Good enough	4,55	Good
24	Respondents 24	2,2	Not good	4,55	Good
25	Respondents 25	2,35	Not good	4,5	Good
26	Respondents 26	3,55	Good enough	4,25	Good
27	Respondents 27	3,15	Good enough	4,3	Good
28	Respondents 28	2,65	Not good	4,35	Good
29	Respondents 29	2,8	Not good	4,15	Good
Average		2,74	Not good	4,48	Good

Source: excel data 2025

Based on data on the learning motivation of students in class XI. The data obtained through observation shows that there is a significant increase in students' learning motivation after the application using liveworksheet media. The results of motivation measurement show an average value of 4.48, which is in the good category. Before the treatment, the learners' motivation score only reached 2.74, which falls into the unfavorable category. This finding shows that the application of a well-designed learning motivation liveworksheet product can significantly increase learners' motivation.

5. Evaluation

After the implementation in class XI, the next stage is the revision of operational testing. This stage aims to improve the Liveworksheets that have been developed based on observation results, quantitative data (pretest and posttest), as well as feedback from students and teachers. Revisions are made to the aspects of appearance, material content, interactivity, and clarity of instructions so that the resulting media is more effective in increasing the motivation to learn Arabic in class XI students of Ar-Raihan Islamic Science-Tech School.

Discussion

The development of digital-based learning media such as liveworksheets is one form of innovation in an effort to increase students' learning motivation, especially in learning Arabic. In this study, the development of Liveworksheets media was carried out through several stages, namely: needs analysis, planning, content development, limited trial, revision, and implementation in experimental classes. The developed Liveworksheets media contains various interactive Arabic language exercises that are tailored to the basic competencies and materials taught in class XI Ar-Raihan Islamic Science-Tech School. This media is designed to attract learners' interest through attractive displays, the use of audio to reinforce pronunciation, as well as a correction automation feature that provides immediate feedback to learners. According to the theory of behaviorism, learning occurs through the process of stimulus and response, where reinforcement plays an important role in shaping learning behavior. Liveworksheets provides positive reinforcement through interactive features, immediate feedback and auto-evaluation results that can motivate learners to keep trying and correcting mistakes. Thus, the use of this media is able to increase the frequency and quality of learners' engagement in the Arabic learning process.

Based on the results of the learning motivation questionnaire given before and after the use of media, there is an increase in the average score on aspects of learning motivation in participating in Arabic lessons. This result shows a significant number, with the average score reaching 4.48 which is categorized as good. This increase is not just a number, but reflects a profound change in the way students interact and respond to their learning. Liveworksheets media has been proven to be able to provide a stronger stimulus of learning motivation, and this can be analyzed from several points of view.

First of all, it is important to understand how learning media can affect student motivation. In this context, Liveworksheets as an interactive media provides a more interesting and enjoyable learning environment. For example, the interactive features in Liveworksheets allow students to actively participate in the learning process. They are not only passive listeners, but also directly involved through various activities designed to improve their understanding of the material. Thus, students feel more engaged and motivated to learn, as they see learning as something interesting and fun.

Furthermore, the increase in learning motivation can also be attributed to the quick and effective feedback aspect provided by this media. In conventional learning, students often have to wait a long time to get feedback from the teacher. However, with Liveworksheets, students can immediately see the results of their work and get immediate assessment. This not only helps them understand the mistakes made, but also provides encouragement to improve. For example, after completing an exercise, students can immediately see their score and which areas need improvement, so they are encouraged to keep learning and trying to do better.

In addition, the design and interface aspects of Liveworksheets also contributed to the increase in learning motivation. An attractive and user-friendly design makes students feel comfortable when using this media. For example, the use of bright colors and interesting visual elements can attract students' attention and make them more focused on the assigned tasks. When students feel happy and comfortable with the tools they use, they tend to be more motivated to learn. Therefore, good design is not just about aesthetics, but also serves as a tool to enhance the overall learning experience.

In addition, the use of interactive media such as Liveworksheets also allows for more personalized learning. Students can learn at their own pace, which is an important factor in increasing learning motivation. For example, a student who is struggling with certain material can repeat the exercises as many times as they need without feeling pressured. In this way, students feel like they have control over their learning process, which in turn can boost their confidence and motivation to keep learning (Anderson & Krathwohl, 2001; Zimmerman, 2002).

In line with this, constructivism theory states that learners construct their own knowledge through experience and active interaction with the learning environment. Liveworksheets support this principle by providing contextual and interactive exercises that allow learners to learn independently, reflect and build their own understanding of the Arabic material. This process triggers intrinsic motivation as learners feel more actively involved in the learning process (Piaget, 1973; Vygotsky, 1978).

Furthermore, the Self-Determination theory developed by Deci and Ryan emphasizes three basic psychological needs that must be met to increase intrinsic motivation, namely Liveworksheet gives learners a sense of autonomy, as they can access and work on tasks independently. The competence aspect is also fulfilled as learners get immediate feedback on their performance, so learners know their learning progress.

Research by Yusuf & Anwar (2020) comparing an experimental class with interactive media and a control class with conventional methods showed significant differences in learning motivation scores, with the experimental class obtaining statistically higher scores. These results support the findings in this study, that the development and use of Liveworksheets media in Arabic language learning can be an effective alternative to increase students' learning motivation, especially in the face of learning that requires language understanding and continuous practice such as Arabic.

Research conducted by Wulandari (2021) supports this finding, where the use of digital-based interactive learning media can significantly improve student learning outcomes in Arabic language subjects. Similarly, research by Hidayat and Nurhalimah (2020) found that technology-based learning media can facilitate a more enjoyable and meaningful learning experience, thus having a direct impact on students' motivation and learning outcomes.

In line with this research, Rohmah (2022) in her research on the use of interactive digital media in Arabic language learning at the high school level, stated that students who used interactive media showed higher engagement, deeper understanding, and better evaluation results compared to students who only used conventional methods. Thus, it can be concluded that the development and use of Liveworksheets media is not only effective in increasing learning motivation, but also contributes significantly to improving learning outcomes, especially in Arabic language learning.

Conclusion

The implementation of the development of Liveworksheets in increasing the motivation to learn Arabic in class XI students of Ar-Raihan Islamic Science-Tech School can be assessed from several indicators that have been analyzed and supported by the results of observations and preliminary research that show learning motivation given before and after the use of media, there is an increase in the average score of 4.48 with a good category. Liveworksheets media is designed to provide an interactive and fun learning experience through features such as drag-and-drop, matching, and audio and image-based exercises, which can attract learners' attention and active involvement. The results of the analysis show that the use of Liveworksheets interactive digital media can stimulate learners' curiosity and participation, assuming that there is a significant effect of liveworksheet media implementation on learners' learning motivation.

References

- Al Qolbi, A. S., Khan, L. F., & Ulfiandi, I. Z. (2024). Challenges and prospects of Arabic language in the modern era. *Ma'arif Journal of Education, Madrasah Innovation and Aswaja Studies*, 3 (1).
- Al-Azawei, A., Parslow, P., & Lundqvist, K. (2017). Barriers and opportunities of e-learning implementation in Iraq: A case of public universities. *The International Review of Research in Open and Distributed Learning*, 18(6), 279–299.
- Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives*. Longman.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268.
- Dewi, T. M., & Meilina, F. (2022). Development of web-integrated higher order thinking skill (HOTS)-based learner worksheets (LKPD) in science learning in elementary schools. *Primary: Journal of Elementary School Teacher Education*, 11 (5), 1368.
- Fadilah, N. (2023). The Impact of Visual Media in Improving Student Understanding of Islamic Religious Education Lessons. *WARAQAT: Journal of Islamic Sciences*, 8(2), 203-210.
- Hasanah, A. (2023). Needs analysis of HOTS-based E-LKPD development assisted by Liveworksheet for elementary school students. *Jurnal Elementaria Edukasia*, 6 (4), 1818-1827.
- Hidayat, A., & Nurhalimah, S. (2020). The Effectiveness of Technology-Based Learning Media on Student Learning Outcomes. *Journal of Educational Technology*, 12(2), 145–156.
- Hilmi, I., & Nurhayati, F. (2024). The effect of learning motivation on Arabic language achievement. *Imperative Syntax Journal: Journal of Social Science and Education*, 4(6), 870–874. *Jurnal Syntax Imperatif*.
- Imam, K. (2018). The effect of learning strategies and learning motivation on Arabic learning outcomes of MAN 2 West Pasaman students (Thesis). Padang State University. repository.unp.ac.id
- Jayanti, E. R., Yulianti, D., Adha, M., & Jaya, M. T. B. S. (2024). Development of learning cycle 7E-based student worksheets (LKPD) on IPAS content to improve critical

- thinking skills of grade IV elementary school students. *Al Qalam: Scientific Journal of Religion and Society*, 18 (4), 2825-2839.
- Koehler, M. J., Mishra, P., & Cain, W. (2017). What is technological pedagogical content knowledge (TPACK)? *Journal of Education*, 193(3), 13–19.
- Mustoip, S., Dz, A. S., & Wulan, D. J. (2023). Integration of artificial intelligence in the management of Islamic-based character education in elementary schools. *Permata: Journal of Islamic Religious Education*, 4 (2), 321-327.
- Piaget, J. (1973). *To understand is to invent: The future of education*. Grossman.
- Pubian, Y. M., & Herpratiwi, H. (2022). The use of Google Site media in learning to increase the learning effectiveness of elementary school students. *Akademika*, 11 (01), 163-172.
- Rohmah, L. (2022). The Use of Interactive Digital Media in Arabic Language Learning at the High School Level. *Journal of Arabic Language Education*, 8(1), 23–35.
- Sukana, S. (2024). Transformation of Islamic religious education (PAI) supervisors in the digital era: Challenges and opportunities in 2024. *Tambusai Education Journal*, 8 (1), 3955-3965.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Wahyuni, S., & Surjono, H. D. (2018). The influence of teacher competence in using interactive learning media on learning effectiveness. *Journal of Technology and Vocational Education*, 24(2), 135–145.
- Wulandari, R. (2021). The Effect of Interactive Media Use on Arabic Language Learning Outcomes of High School Students. *Journal of Education and Learning*, 10(1), 45–52.
- Yusuf, M., & Anwar, D. (2020). Comparison of Student Learning Outcomes Using Interactive Media and Conventional Methods. *Journal of Educational Evaluation*, 7(2), 88–95.
- Zainuddin, Z., & Attaran, M. (2016). Malaysian students' perceptions of flipped classroom: A case study. *Innovations in Education and Teaching International*, 53(6), 660–670.
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64–70.