

Development Of Fiqh Learning Strategy Based On Visual Thinking Using Digital Infographics To Improve Learning Outcomes

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ABSTRACT

This study aims to develop and test the feasibility and effectiveness of a visual thinking-based learning strategy using digital infographics in teaching prayer jurisprudence to second-grade elementary school students. This research is driven by the students' limited ability to perform prayer movements in sequence and accurately, which indicates a gap between memorization and procedural understanding. This study uses a mixed-methods approach with Research and Development (R&D) employing the ADDIE model, which consists of the stages of Analysis, Design, Development, Implementation, and Evaluation. The research subjects are second-grade students. Data were collected thru needs analysis interviews, classroom observations, expert validation questionnaires, and pretest-posttest assessments. The developed product was validated by subject matter and media experts to ensure content accuracy, visual clarity, and pedagogical appropriateness. The validation results show that the digital infographic media meets high feasibility criteria. The effectiveness test shows a significant improvement in student learning outcomes, as reflected in the analysis of gain scores between pretest and posttest results. The visual thinking strategy facilitates student understanding by presenting the concept of prayer in a structured visual sequence, allowing for better retention and procedural understanding. The integration of visual representations and digital media supports cognitive development at the concrete operational stage and enhances student engagement in religious education. Therefore, the application of visual thinking thru digital infographics can serve as an innovative and effective alternative strategy in Islamic religious education at the elementary school level, particularly in improving students' practical understanding of prayer.

I. INTROUCTION

Islamic Religious Education at the elementary school level plays a fundamental role in shaping the religious character and worship skills of students from an early age [1]. Ideally, the study of fiqh, particularly the subject of prayer, aims not only to instill memorization of recitations but also to build conceptual understanding and practical skills that are correct according to the guidance of sharia [2]. The Merdeka Curriculum emphasizes meaningful, contextual learning, as well as a focus on strengthening the spiritual and character competencies of students [3]. In this context, second-grade students are in the concrete operational phase, so learning ideally should be presented visually, systematically, and applicatively to be easily understood and practiced [4]. However, the reality on the ground shows a gap between that ideal and the actual learning practices. Based on the initial observations in this thesis, most students are not yet able to perform the prayer movements in the correct and orderly sequence. Students tend to memorize the recitations without understanding the connections between movements, so when asked to practice independently, errors still occur in the sequence and accuracy of the movements. This condition indicates that the learning is still oriented toward the verbal cognitive aspect, not yet fully touching on the procedural and visual dimensions [5]. However, the urgency of prayer education is clearly emphasized in the Qur'an and Hadith from a theological perspective [6]. QS. Luqman verse 17 emphasizes the importance of establishing prayer

as the main pillar in the formation of spiritual character [7]. Similarly, the Prophet's hadith, which instructs parents to accustom their children to pray from the age of seven, indicates that prayer education must be conducted systematically and gradually [8]. This normative ideal demands an appropriate pedagogical approach so that children not only know but also are able to perform worship correctly [9].

In the perspective of Islamic educational neuroscience, the learning process of elementary school children is greatly influenced by visual stimulation and concrete experiences [10]. Suyadi explains that the balanced activation of the right and left brain systems thru visualization can strengthen conceptual understanding and long-term memory [11]. Visual thinking-based learning allows students to build mental representations thru images, symbols, and structured diagrams, making information easier to process and remember [12]. Therefore, the visual approach becomes relevant in procedural fiqh learning [13]. On the other hand, Waharjani emphasized that the PAI learning strategy in elementary schools must be adaptive to the cognitive development characteristics of students and contextual to the needs of 21st-century learning [14]. Innovation in strategies and learning media has become a necessity to prevent the learning process from being monotonous and teacher-centered [15]. However, in practice, many fiqh lessons are still conducted conventionally thru lecture methods and simple demonstrations without systematic visual media support [16]. As a result, students have difficulty understanding the sequence of movements comprehensively and coherently [17].

Muh. Nur Rochim Maksum emphasizes that the study of fiqh should proportionally integrate normative and applicative aspects. Fiqh is not merely legal knowledge, but a practical guide that must be realized in real actions [19]. If learning only emphasizes the theoretical aspect, then the meaning of fiqh as a life guide is reduced [20]. The impact of this less applicative approach is evident in the low accuracy of students' worship practices, even tho they are cognitively able to answer theoretical questions [21]. Moreover, the development of educational technology opens up significant opportunities to present more innovative and engaging learning media [22]. Wantini stated that the integration of digital media in PAI learning can significantly enhance student motivation and engagement [23]. Digital-based media allows for the presentation of material in a visual, interactive, and systematic manner [24]. One of the potential approaches to bridge the gap between ideality and reality is the visual thinking strategy based on digital infographics [25]. Visual thinking emphasizes the thinking process thru organized visual representations in the form of flows, diagrams, and symbols [26]. In the context of prayer material, digital infographics can present the sequence of movements chronologically, complete with brief explanations and illustrations that help students understand the interconnections between the pillars [27]. This approach aligns with the cognitive development characteristics of students. Previous research has shown that the use of visual and digital media in learning can significantly improve learning outcomes and concept understanding [29], [30]. However, there has not been much research specifically integrating visual thinking strategies with digital infographics on the topic of prayer jurisprudence in second-grade elementary school classes. This gap is the basis for the urgency of this research.

Based on the aforementioned exposition, this research aims to: (1) develop a visual thinking-based learning strategy using valid and practical digital infographics on prayer material for second-grade students at SD N 1 Jonggrangan; (2) measure the effectiveness of visual thinking-based digital infographics in improving cognitive learning outcomes and prayer practice for second-grade students at SD N 1 Jonggrangan. It is hoped that this research can provide theoretical contributions in the development of PAI learning strategies based on neuroscience and digital technology, as well as practical contributions in the form of media products that can be used by teachers in the implementation of the Merdeka Curriculum in a more innovative and meaningful way.

II. METHODS

This research uses a mixed methods approach with a Research and Development (R&D) type that adapts the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) [31]. This model was chosen because it is systematic and suitable for the development of digital media-based learning products, and it allows for the integration of qualitative and quantitative data in testing the feasibility and effectiveness of the product [32].

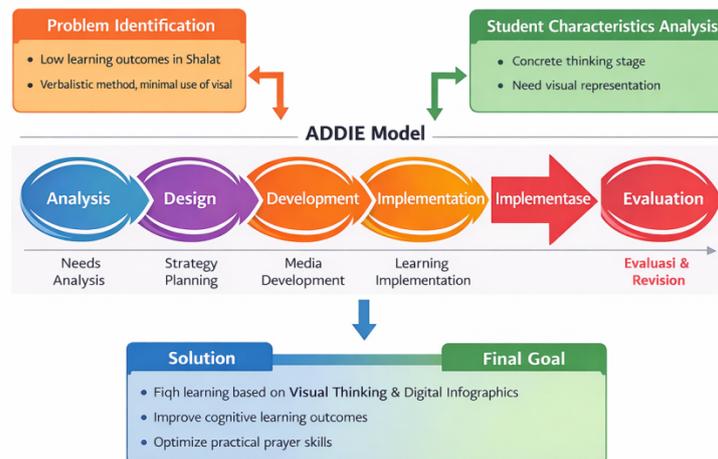


Figure 1. ADDIE Model

(1) The Analysis stage is conducted thru observation, interviews with PAI teachers, and identification of the characteristics of second-grade students. The analysis results show that students have difficulty understanding the sequence and accuracy of prayer movements procedurally. The analysis also considers the cognitive development of the concrete operational stage from the perspective of Islamic education neuroscience [33], thus requiring systematic visual media. (2) The Design Stage includes the design of visual thinking strategies using digital infographics with sequential movement flows, child-friendly visuals, and simple text [34]. This design refers to the principles of adaptive and contextual PAI learning innovation [35], as well as the integration of normative and applicative aspects in fiqh [36]. (3) The Development stage is carried out thru validation by subject matter and media experts using a Likert scale questionnaire [37]. Validation ensures the accuracy of fiqh substance as well as the visual quality and readability of the product [38]. (4) The Implementation stage involves trials with second-grade students using a pretest–posttest design to measure the improvement in learning outcomes [39]. (5) The Evaluation stage is conducted both formatively and summatively thru analysis and user feedback [40]. The integration of digital media in this evaluation aligns with Wantini's view on the importance of technology in PAI learning [13]. Thus, this method is designed to produce a product that is valid, practical, and effective in enhancing the understanding of prayer practices among elementary school students.

III. RESULTS AND DISCUSSION

Development of Visual Thinking-Based Learning Strategies Using Valid and Practical Digital Infographics

The analysis stage was conducted thru learning observations, interviews with PAI teachers, and the identification of the characteristics of second-grade students at SDN 1 Jonggrangan. Based on the observation results, it was found that most students were not yet able to perform the prayer movements in a sequential and correct manner according to the order of the pillars. Students tend to memorize the recitations without understanding the connections between movements, so when asked to practice independently, they still make mistakes in the order of takbir, ruku', i'tidal, sujud, and tahiyat akhir. Quantitatively, the initial pretest results show that the class average score is still below the Learning Achievement Criteria (KKTP). This indicates a gap between the mastery of theory and the practice of worship. These findings reinforce the importance of developing visual media that can help students systematically understand the structure of movements. In the perspective of Islamic education neuroscience, this condition indicates suboptimal visual stimulation in the learning process. Suyadi (2020) emphasizes that PAI learning based on neuroscience must involve the simultaneous functioning of visual and kinesthetic memory systems to strengthen synaptic connections [5]. Without systematic visual support, procedural understanding tends to be weak and easily forgotten [41].

Based on the identified needs, a visual thinking-based learning strategy was designed using digital infographics. The product was developed in a sequential visual format that displays: (1) The chronological order of the pillars of prayer, (2) Clear illustrations of movements, (3) Brief explanations of each pillar, (4) Contrasting colors and child-friendly typography [42]. This design refers to the principles of visual cognition for elementary school children, as explained by Suyadi, who stated that children in the concrete operational stage find it easier to understand structured visual information compared to long narrative texts[12]. In addition, the design also considers the contextual innovation of PAI strategies as proposed by Waharjani [14]. The infographic product is then arranged in a cohesive flow that allows students to see the entire structure of prayer in one complete view, thereby facilitating the understanding of the relationships between movements. Expert Content Validation Expert content validation is conducted to assess the content's conformity with fiqh principles and the accuracy of the sequence of prayer pillars. The evaluation results can be seen in Table 1.

Tabel 1. Validation

Validator	Score
Validator Subject Matter Expert I	50
Validator Subject Matter Expert II	53
Total score	103
Maximum score	60
Average total score	51,5
Percentage	85,83%
Category	Very eligible

Based on the table, the product received a feasibility percentage of 85.83% with the category "Very Feasible." This means that, in terms of fiqh substance, the product is in accordance with the

principle of integrating theory and practice as emphasized [16]. Media Expert Validation Media Expert Validation The media experts evaluate the visual aspects, graphic design, readability, and attractiveness. The results are shown in Table 2. Table 2. Media Expert Validation Results.

Tabel 2. Score

Validator	Score
Validator Media Expert I	54
Validator Media Expert II	48
Total score	102
Maximum score	56
Average total score	51
Percentage	91,1%
Category	Very eligible

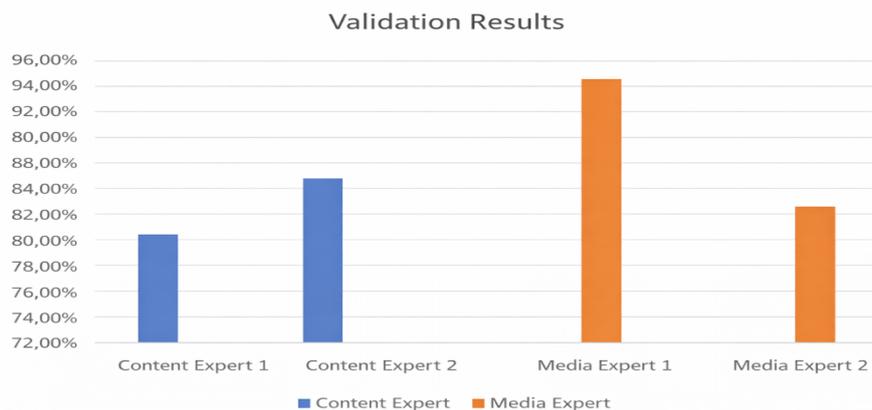


Diagram 1. Summary of Expert Validation Results

Based on the overall percentage diagram, it shows that the product is very suitable for use in learning. This is in line with Wantini, who stated that systematically designed digital media can enhance student motivation and engagement [22].

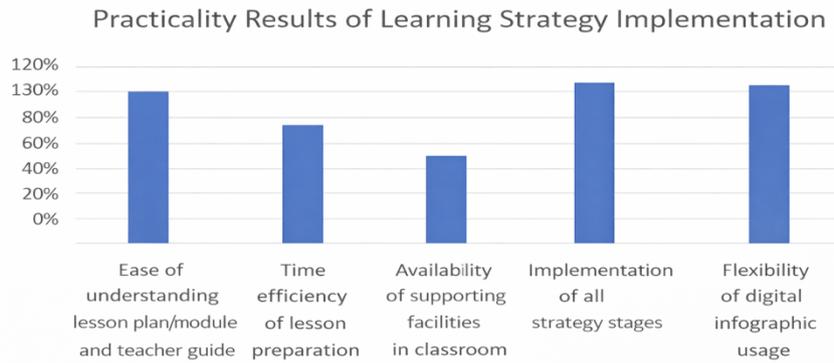


Diagram 2. Practicality Results of Learning Strategy Implementation

In conclusion, this learning strategy and digital infographic have proven to be practical for implementation by teachers at SDN 1 Jonggrangan. This high level of practicality aligns with the research by Hidayat and Lestari, which emphasizes that digital learning media must be easily accessible and applicable in order to function effectively in the context of modern education [43]. Evaluation Stage Reflection on the visual thinking-based learning strategy using digital infographics to identify the extent to which the learning process aligns with the planning.

Table 3. Descriptive statistics of students' cognitive pretest and posttest results

Test Type	N (Number of Students)	Lowest Score	Highest Score	Average
<i>Pre-test</i>	28	40	65	53,93
<i>Post-test</i>	28	70	95	80,89

From the diagram above, it is stated that there is an increase in pretest scores with posttest scores for 28 students of SD N 1 Jonggrangan.

The Effectiveness of Digital Infographics

Based on Visual Thinking in Improving Cognitive Learning Outcomes and Prayer Practices of Second Grade Students at SD N 1 Jonggrangan 1. Results of the Effectiveness Test for Improving Cognitive Learning Outcomes The effectiveness test was conducted by comparing the pretest scores (before implementation) and posttest scores (after implementation) of 28 second-grade students at SDN 1 Jonggrangan.

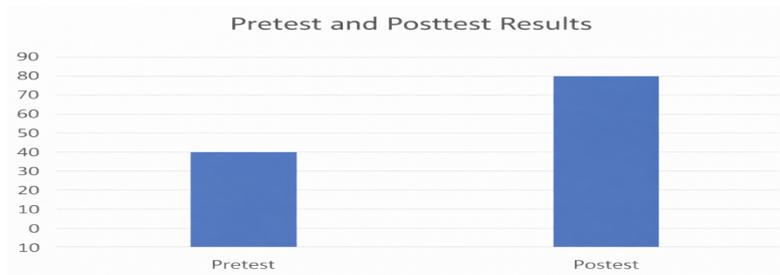


Diagram 3. Pretest and Posttest Results

Before the effectiveness test is conducted, a normality test is first performed to ensure the data distribution is normal.

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	,148	28	,119	,935	28	,083
Posttest	,163	28	,056	,943	28	,129

a. Lilliefors Significance Correction

Descriptive statistical analysis in Table 4. The normality test of the data was conducted using the Shapiro–Wilk test because the sample size was less than 50 ($n = 28$). The pretest variable has a significance value of 0.083 ($\text{Sig.} > 0.05$), indicating that the pretest data is normally distributed.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	53,9286	28	7,49780	1,41695
	Posttest	80,8929	28	6,39061	1,20771

The results of the paired sample T-Test for cognitive learning outcomes in table 5 show that the average pretest score was 53.93, while the average posttest score increased to 80.89. An increase of 26.96 points indicates a significant improvement in scores after the treatment/intervention was given.

Paired Samples Correlations

		N	Correlation	Significance	
				One-Sided p	Two-Sided p
Pair 1	Pretest & Posttest	28	,794	<,001	<,001

Correlation tests were conducted to determine the relationship between pretest and posttest scores among the research respondents. Based on the results of the paired samples correlations analysis, a sample size of 28 respondents was obtained with a correlation coefficient value of $r = 0.794$.

Paired Samples Test

		Paired Differences					Significance			
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	Pretest - Posttest	-26,96429	4,58243	,86600	-28,74117	-25,18740	-31,137	27	<,001	<,001

Based on the analysis results, the mean difference between the pretest and posttest was obtained as -26.96. The negative difference indicates that the average posttest score is higher than the pretest score. Based on these results, it can be concluded that the treatment given in this study significantly influenced the improvement in respondents' learning outcomes/abilities, thus the research hypothesis stating the difference between pretest and posttest is accepted.

Results of the effectiveness test on the improvement of prayer practice learning outcomes. The effectiveness of the improvement in prayer practice was measured through an observation sheet of students' prayer practice after the implementation of the strategy.

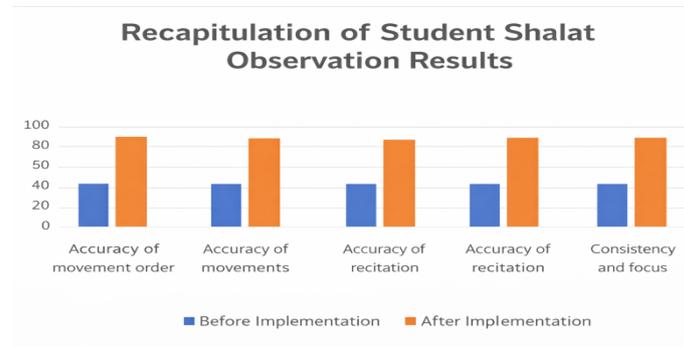


Diagram 4. Results of Prayer Practice Observation

Data from the observation of students' prayer practices show a very significant improvement in psychomotor skills after the implementation of a visual thinking-based learning strategy using digital infographics.

IV. CONCLUSION

Based on the research findings in this thesis, it can be concluded that the application of a visual thinking strategy based on digital infographics significantly improves the understanding and practical skills of second-grade students in performing prayers. The analysis results show an increase in students' ability to recognize the sequence of movements, recitations, and the accuracy of prayer performance after using digital infographic media compared to before the treatment was given. These findings are supported by data showing an increase in learning outcome scores as well as practice observations that indicate positive changes in the cognitive and psychomotor aspects of the students.

The claims in this study are consistently supported by the results obtained, both through quantitative data and observational findings, making them logical and reasonable. The results are also in line with the initial expectations of the research and reinforce previous research findings that state that visual media and technology-based approaches can enhance the understanding of abstract and procedural concepts among elementary school students. This research does not contradict constructivist learning theory or dual coding theory, which emphasize the importance of visual and verbal combinations in enhancing learning retention [44], but rather reinforces them in the context of Islamic Religious Education [45] [45]. Overall, this research has contributed to the development of innovative technology-based learning strategies in elementary schools, particularly in the teaching of worship practices. This study enriches the scientific corpus by demonstrating that the integration of digital infographics into visual thinking strategies not only enhances learning outcomes but also encourages active engagement and deeper understanding among students, thereby expanding the application of visual learning theory in the context of religious education.

REFERENCES

- [1] Hasbullah, *Fikih Salat Banin*. Medan: Gerhana Media Kreasi, 2024.
- [2] Zuhairini, *Metodologi Pendidikan Agama Islam*. Malang: Universitas Negeri Malang Press, 2004.
- [3] S. Aman, *Dahsyatnya Energi Sholat*. Jakarta: Almarwardi Prima, 2012.
- [4] H. P. Damanik, "Inovasi Media Visual dan Digital dalam Pembelajaran Pendidikan Agama Islam Abad Ke-21," *J. Kualitas Pendidik.*, vol. 3, no. 1, p. 2025, 2025.
- [5] Suyadi and R. Sasmita, "Pengembangan Media Pendidikan Agama Islam Berbasis Neurosains dalam

- Meningkatkan Higher Order Thinking Skill (HOTS),” *Potensia J. Kependidikan Islam*, 2022.
- [6] Waharjani, “Strategi Pembelajaran PAI di SD,” *J. Pendidik. Dasar Islam*, vol. 3, no. 1, pp. 50–65, 2018.
- [7] M. M. et al Hanafi, *Al Qur’an dan Terjemahannya*. Jakarta: Badan Litbang dan Diklat Kementerian Agama RI, 2019.
- [8] Waharjani, “Kontekstualisasi Pembelajaran Fikih,” *JPI*, vol. 6, no. 1, pp. 77–90, 2020.
- [9] M. N. R. Maksum, “Pendidikan Fikih Kontekstual,” *J. Syariah*, vol. 7, no. 1, pp. 80–95, 2020.
- [10] Suyadi, “Inovasi Pembelajaran Islam Berbasis Neurosains,” *Edukasia J. Pendidik. dan Pembelajaran*, 2020.
- [11] Suyadi, “Neurosains Pendidikan Islam: Integrasi Otak, Hati, dan Akal dalam Pembelajaran,” *POTENSIA J. Kependidikan Islam*, 2022.
- [12] Suyadi, “Kognisi Visual Anak Sekolah Dasar,” *J. Edukasi Islam*, vol. 9, no. 1, pp. 1–15, 2024.
- [13] Wantini, “Inovasi Media PAI di Era Kurikulum Merdeka,” *J. Pendidik. Dasar Islam*, vol. 10, no. 1, pp. 1–18, 2023.
- [14] Waharjani, “Strategi Aktif dalam PAI,” *J. Tarb. Islam.*, vol. 8, no. 1, pp. 10–25, 2022.
- [15] M. N. R. Maksum, “Metodologi Pembelajaran Fikih,” *J. Huk. Islam*, vol. 5, no. 1, pp. 33–48, 2017.
- [16] M. N. R. Maksum, “Inovasi Pembelajaran Fikih SD,” *J. Madrasah*, vol. 9, no. 1, pp. 60–75, 2023.
- [17] M. N. R. Maksum, “Integrasi Teori dan Praktik Fikih,” *Al-Ahkam*, vol. 6, no. 2, pp. 120–135, 2018.
- [18] M. N. R. Maksum, “Fikih dan Pendidikan Karakter,” *JPI*, vol. 8, no. 2, pp. 140–155, 2021.
- [19] Waharjani, “Kurikulum Merdeka dan PAI,” *J. Ilm. Pendidik.*, vol. 7, no. 2, pp. 150–162, 2021.
- [20] Waharjani, “Inovasi Metode PAI,” *J. Tarbawi*, vol. 4, no. 2, pp. 100–115, 2019.
- [21] Wantini, “Media Pembelajaran PAI Berbasis ICT,” *J. Pendidik. Islam*, vol. 2, no. 1, pp. 15–30, 2016.
- [22] Wantini, “Pengembangan Media Digital PAI,” *JPI*, vol. 4, no. 2, pp. 90–105, 2018.
- [23] Wantini, “Digitalisasi Pembelajaran Agama,” *J. Edukasi*, vol. 5, no. 1, pp. 40–55, 2019.
- [24] Wantini, “Motivasi Belajar PAI dan Media Interaktif,” *J. Tarb.*, vol. 7, no. 1, pp. 70–85, 2021.
- [25] Suyadi, “Desain Pembelajaran PAI di Era Digital: Implementasi Media Visual dan Digital dalam Pendidikan Islam,” *Intiqad J. Agama dan Pendidik. Islam*, 2021.
- [26] R. E. Horn, *Visual Language: Global Communication for the 21st Century*. Bainbridge Island: MacroVU Press, 2016.
- [27] S. Ahmad Indrus, dkk, “Flipbook Digital Dalam Pembelajaran PAI: Inovasi Media Pembelajaran Kreatif Untuk Meningkatkan Minat dan Hasil Belajar Siswa,” *J. Literasiologi*, vol. 13, pp. 182–201, 2023.
- [28] A. Arsyad, “Media Pembelajaran Interaktif dalam Meningkatkan Keterampilan Berpikir Visual Siswa Sekolah Dasar,” *J. Pendidik. dan Teknol.*, vol. 4, no. 2, pp. 88–101, 2022.
- [29] I. F. Abdurohman, Lukman Nulhakim, “Pengaruh Pembelajaran Berbasis Proyek Dengan Berbantuan Infografis Terhadap Kreatifitas Siswa Kelas V sdn 1 Waranggunung Kabupaten Lebak,” *J. Ilm. Pendidik. Dasar*, vol. 10, no. 2, pp. 4–5, 2025.
- [30] D. Saputra, M. F. N. G. Ratumbusang, and A. H. Utama, “Pengembangan media pembelajaran pai berbasis infografis dengan materi berwudhu untuk kelas II SD,” *J-Instech*, vol. 2, no. 1, pp. 100–105, 2021.
- [31] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Los Angeles: Sage Publications, 2018.
- [32] Sugiyono, *Metodologi Penelitian Kuantitatif, Kualitatif dan R & D*. 2020.
- [33] Suyadi and T. K. Akbar, “Desain Pembelajaran Pendidikan Islam Berbasis Neurosains: Peran Musik, Pencahayaan, dan Tata Ruang,” *Intiqad J. Agama dan Pendidik. Islam*, 2021.
- [34] E. R. Tufte, *The Visual Display of Quantitative Information*. Cheshire: Graphics Press, 2013.
- [35] K. Zuhria, D. P. Pascasarjana, and U. M. Malang, “Pengembangan bahan ajar digital interaktif integratif pembelajaran menulis teks eksposisi kelas x sma,” 2024.
- [36] Y. Cahyani, S., Cahyani, I., & Mulyati, “dan Pengajarannya Analysis of Needs for The Development of Viewing Skills , An Infographic Based on The Middle School Level,” vol. 11, no. 1, pp. 537–548, 2025.
- [37] Sugiyono, *Metode Penelitian Kualitatif*. Bandung: Alfabeta, 2019.
- [38] Lynda FitriAriyanti, “Strategi Orangtua Millennial Dalam Menanamkan Kesadaran Menjalankan Shalat Lima Waktu,” *J. Ilmu Pendidik.*, vol. 1, no. Institut Agama Islam Negeri (IAIN) Salatiga, p. 80, 2020.