

Development of PAI Learning Media Using Problem Based Learning Methods Based on Animation and Quizwhizzer

Viona Sulastia Pratiwi¹, Hakam Magdea Fardana Ansie²

¹Pendidikan Agama Islam, Universitas Islam Negeri Salatiga, Indonesia

²Economic, Faculty of Economic and Administrative Science, Kütahya Dumlupınar University, Türkiye

Article Info

Keywords:

PAI learning media
Problem Based Learning
Animation
Quizwhizzer

ABSTRACT

This research uses a method with the development of ADDIE. ADDIE is an effective model for many people to use, it also provides a structured, common framework. The learning method used is PBL (Problem Based Learning). The expert validation results stated that the validated data consisted of five validators which produced an average value of 4.46, so the media used was categorized as "good". The research implementation test was carried out in three schools. The results of the N-gain Test field research showed that the average N-gain value for SMK N 2 Salatiga was 68.56% in the "Quite Effective" category, for SMK N 1 Kemusu it was 61.03% in the "Quite Effective" category, then for the N-gain data for SMKS Ma'arif NU 2 Boyolali it is 64.73% in the "Quite Effective" category. So, it can be concluded that the development of learning media in the form of animated video media has an influence on Islamic Religious Education learning.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Viona Sulastia Pratiwi
Pendidikan Agama Islam, Universitas Islam Negeri Salatiga, Indonesia
Email: vionasulastiapратиwi@gmail.com

1. INTRODUCTION

Education cannot be separated from community life [1]. The desire to preserve culture through education arises because humans want to progress in their lives [2]. Even the education process has been going on for a long time. Through the history of mankind and its socio-cultural development, educational activities have become a common practice since the creation of mankind [3]. Education is about developing human potential, changing it for the better and improving it [4]. Education is a hot topic among Indonesian society. One of the topics discussed was improving the quality of education itself. All stakeholders have made various efforts to improve education in Indonesia [5]. Education in Indonesia is organized by the community, government and educational institutions [6].

The swift progress of information technology during the era of globalization has a substantial impact on the realm of education [7]. As educational technology advances, the utilization of learning materials, particularly those based on multimedia, is anticipated to enhance and facilitate the learning process [8]. Multimedia-based learning systems (technology that uses images and sound video) can facilitate learning content and delivery that is less monotonous but more interesting [9]. Teachers must be able to come up with creative and innovative ideas to develop the media used to teach their students. It has a huge influence on student learning [10]. According to God's Word, technological progress has a very important value for life.

There are many reasons why students have difficulty following lessons. A common learning difficulty experienced by students is misunderstanding the material presented by the teacher [11]. There are various reasons why students may not comprehend the material presented by the teacher. When teachers use the same teaching methods students easily get bored and have difficulty understanding the subject [12]. Students do not show interest in paying attention and understanding the teacher because many students do not pay attention. Students are too lazy to follow the teacher when studying in class. More students are passive than active students. Teachers continue to lack diversity in utilizing various types of learning media. Meanwhile, the learning process undoubtedly necessitates a range of teaching and learning activities to create an effective and efficient classroom environment, particularly to enhance students' comprehension of the material [13]. An effective teaching and learning activity involves the utilization of suitable learning media [14].

The precision in employing learning media significantly impacts the quality of both the educational process and the outcomes achieved [15]. It can be asserted that any learning media is effective in conveying messages and aiding students in engaging their thoughts and emotions in the learning process, thereby facilitating the achievement of learning objectives [16]. Therefore, it is anticipated that teachers can discern learning media that captivate students' interest, ensuring that the selected media aligns appropriately with the presented material. [17]. The classroom environment will be effective and efficient if the learning media used by the teacher is appropriate, and learning activities are carried out in accordance with the stated objectives [18]. This underscores the importance of the professionalism of PAI (Islamic Education) teachers in making PAI education enjoyable and engaging, such as through the utilization of animated video media as a learning medium.

Currently, the utilization of animated video media has proliferated across various industries, ranging from entertainment, where it serves as a learning tool in classrooms, to the realms of education, advertising, and sales in the business world [19]. Apart from using animation media, learning media that is attractive to students can be combined with other learning media [20]. In this case, researchers use other learning aids to support learning and learning activities. The learning aid used is a quizwhizzer. Quizwhizzer is a test that resembles a quiz but in web form [21]. The appearance of the quizwhizzer is also supported by images or designs as desired to attract students [22]. Regarding the background explained above, the author designed the research title "Development of PAI Learning Media Using Problem Based Learning Methods Based on Animation and Quizwhizzer".

2. METHOD

The conducted research falls under the category of Research and Development (R&D). Development Research (R&D) is a type of research aimed at creating a specific product and evaluating its effectiveness [23]. The product under consideration is not limited to hardware, such as books, modules, learning aids, or laboratories. It can also encompass software, including programs for data processing, classroom learning, libraries, learning models, training, guidance, evaluation, management, and various other applications [24]. Based on the provided definition, the researcher concludes that development research involves creating a product within a specific field of expertise and testing its effectiveness or suitability.

The research subjects include expert assessments from individuals such as lecturers specializing in media and subject matter experts, as well as several schools comprising students from the tenth grade of vocational schools. The students chosen as subjects were students who had never previously received material regarding corpse management. The subjects taken consisted of 3 classes, each at a different school, including SMK Negeri 2 Salatiga, SMK Negeri 1 Kemusu and SMK Ma'arif NU 2 Boyolali.

The development procedure used in developing this learning media was adapted from Instructional Media D6esign (Lee and Owens), namely the ADDIE model. The ADDIE instructional model is a five-phase instructional process, comprising analysis, design, development, implementation, and dynamic evaluation [25].

3. RESULTS AND DISCUSSION

Before incorporating it into teaching and learning activities, the design of animated video media for Islamic Religious Education undergoes expert validation. This validation process includes assessments from material experts and media experts. So that the resulting animated video media is suitable for use in class. Validation data was obtained from learning media evaluations carried out by five validators consisting of two lecturers who were experts in Islamic Religious Education material and three lecturers who were media experts. This validation activity was carried out on Tuesday, 06 December 2022.

3.1. Expert Validation Assessment

The following is a presentation of an expert validation assessment using PAI learning media, animation-based corpse management material.

Table 1. PAI Learning Media Expert Validation Assessment of Dead Body Management Material

No	Observed Aspect	Observation value				
		V1	V2	V3	V4	V5
1	Material					
	a. Use of animated video media in accordance with the material to be presented	5	5	5	5	5
	b. The animated video media used is in accordance with the learning objectives	5	5	4	4	5
	c. The Animation Video Media used is in accordance with Basic Competencies	5	4	5	4	4
	d. Animation Video Media makes it easier for students to understand the material presented	5	5	5	4	4
2	Media Display					
	a. The display of animated video media is interesting for students and increases motivation	5	5	5	4	5
	b. The animated video media displayed is not boring	5	5	5	4	4
	c. The combination of images used in Animation Video Media supports the explanation of the material	5	5	5	4	4
	d. The use of animated video media makes students more enthusiastic in following lessons	3	4	4	4	5
	e. The sound in the Animation Video Media can be heard clearly	4	4	4	4	5
	f. The combination of background sound and sound in animated video media is appropriate	4	4	4	3	4
	Amount	46	46	46	40	45
	Maximum value	3	4	4	3	4
	Minimum value	5	5	5	5	5
	Average	4,6	4,6	4,6	4	4,5

The table analysis indicates that V1, V2, and V3 received a score of 46 with an average of 4.6, placing them in the good category. V4 obtained a score of 40 with an average of 4, also falling into the good category. V5 scored 45 with an average of 4.5, again categorizing it as good. The results of the average assessment of each respondent in the form of a score are then converted into a value on a scale of five. Furthermore, it can be seen in the diagram below.

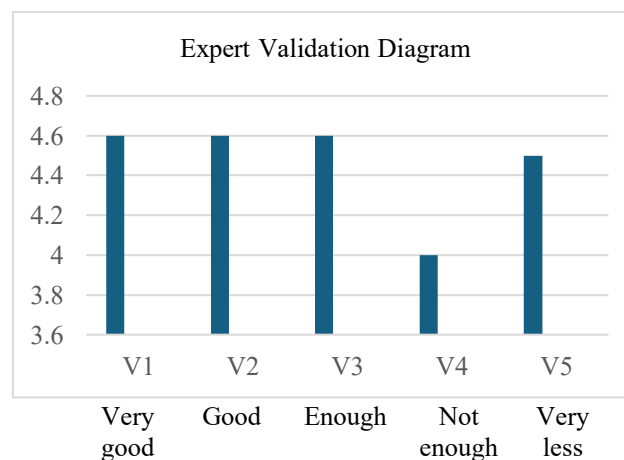


Figure 1. Average results of expert validation

3.2. Pretest and Posttest Data Analysis Results

Results of field implementation tests using Quizwhizzer and Animation Video Media carried out in three schools. This implementation test was carried out at SMK Negeri 2 Salatiga on Tuesday 13 December 2022, then at SMK Negeri 1 Kemusu on Wednesday 14 December 2022, and finally at SMKS Ma'arif NU Boyolali on Thursday 15 December 2022. In this implementation, there are activities involving both Pretest and Posttest assessments.

The descriptive data analysis results for both the pretest and posttest are presented in the table below.

Table 2. Descriptive Analysis

	Pretest			Posttest		
	SMKN 2 SALATIGA	SMKN 1 KEMUSU	SMKS Ma'arif NU 2 Boyolali	SMKN 2 SALATIGA	SMKN 1 KEMUSU	SMKS Ma'arif NU 2 Boyolali
Minimum	56	52	52	80	80	80
Maximum	76	76	76	96	96	96
Mean	66,70	65,40	62,50	89,80	87,00	87,40

From the table above it is known:

1. Results of pretest and posttest scores for class X TKJ B SMK N 2 Salatiga conducted on December 13, 2022, for the large sample, there are 20 students with a minimum score of 56 increasing to 80 and a maximum score of 76 increasing to 96 with an average of 66.70 increasing to 89.80.
2. Results of pretest and posttest scores for class X TKJ 2 SMK N 1 Kemusu which was conducted on December 14, 2022, for many samples it is 20 students with a minimum score of 52 increasing to 80 and a maximum score of 76 increasing to 96 with an average of 65.40 increasing to 87.00.
3. Results of pretest and posttest scores for class X SMKS Ma'arif NU 2 Boyolali which was carried out on December 15, 2022, for a large sample of 20 students with a minimum score of 52 increasing to 80 and a maximum score of 76 increasing to 96 with an average of 62.50 increasing to 87.40.

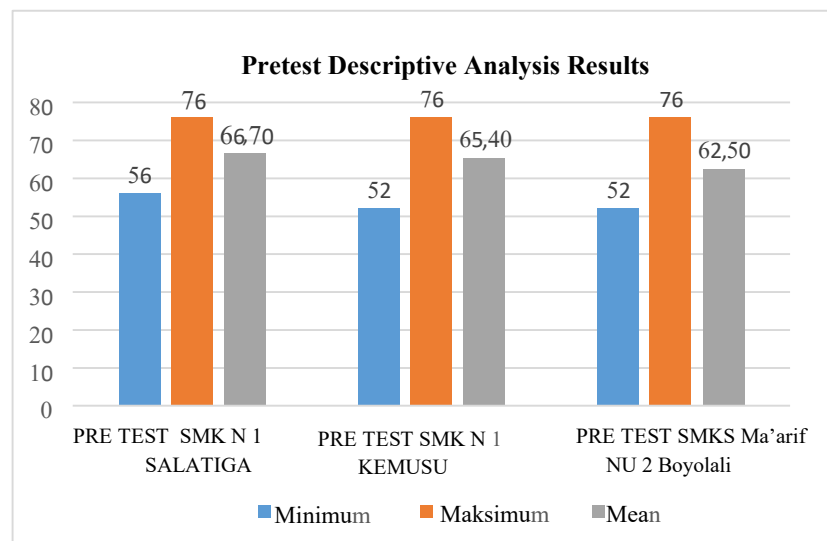


Figure 2. Pretest Analysis Results

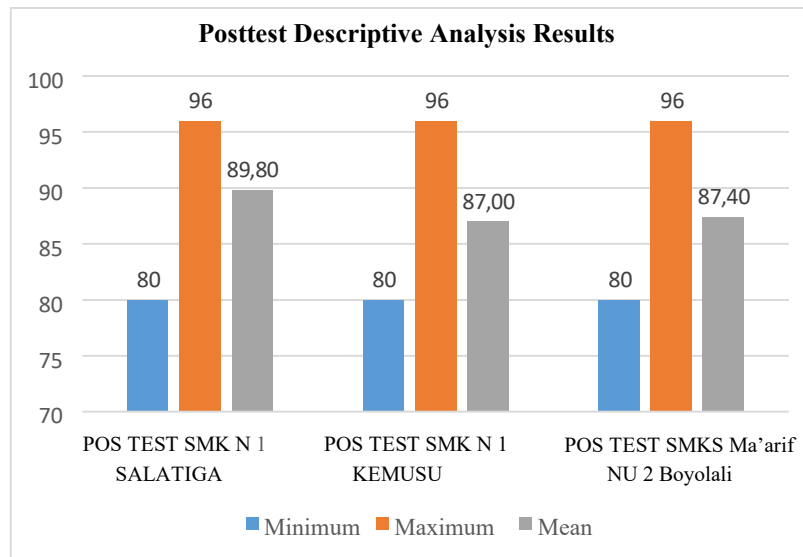


Figure 3. Post test analysis results.

3.3. Normality test

The normality test for the pretest and posttest outcomes was conducted using the Kolmogorov-Smirnov and Shapiro-Wilk tests through the IBM SPSS Statistics 26 for Windows software application. Data is considered normal when the significance value (sig.) is greater than 0.05, indicating a normal data distribution. Conversely, if the significance value (sig.) is less than 0.05, it signifies a non-normal data distribution. To find out more details, see the table below.

Table 3. Normality Test Kolmogorov-Smirnov

No	Testing	Results	Information
1	Pretest SMK N 2 Salatiga	,103 ^c	Normal
2	Posttest SMK N 2 Salatiga	,141 ^c	Normal
3	Pretest SMK N 1 Kemusu	,115 ^c	Normal
4	Posttest SMK N 1 Kemusu	,069 ^c	Normal
5	Pretest SMKS Ma'arif NU 2 Boyolali	,075 ^c	Normal
6	Posttest SMKS Ma'arif NU 2 Boyolali	,200 ^c	Normal

Based on the provided information, it is evident that the significance values for the pretest results of SMK N 2 Salatiga and the posttest results were 0.103 and 0.141, respectively. Pretest at SMK N 1 Kemusu 0.115 and posttest at SMK N 1 Kemusu 0.069. Pretest SMKS Ma'arif NU 2 Boyolali 0.075 and posttest SMKS Ma'arif NU 2 Boyolali 0.200. So, it can be concluded that all sig values. exceeds 0.05 then the data is normally distributed.

3.4. Homogeneity Test

The homogeneity test aims to find out whether several groups of research data have the same variance or not. In decision-making, if the significance value (sig.) is less than 0.05, it indicates that the population variance data is not homogeneous. Conversely, if the significance value (sig.) is greater than 0.05, it suggests that the population variance data is homogeneous. Test homogeneity with the IBM SPSS Statistics 26 for Windows software application.

Table 4. Homogeneity Test Results of Pretest Values and Posttest Values

		Levene Statistic	df1	df2	Sig.
PRETEST	Based on Mean	0,642	1	58	0,426
POSTTEST	Based on Mean	0,703	1	58	0,405

It can be seen from Table 4.5 Homogeneity Test. The pretest scores for SMK N 2 Salatiga and SMK N 1 Kemusu with SMKS Ma'arif NU 2 Boyolali have sig. greater than 0.05 then it is said to be significant and homogeneous. Likewise with Tables. Homogeneity Test The posttest scores of SMK N 2 Salatiga and SMK N 1 Kemusu with SMKS Ma'arif NU 2 Boyolali have sig. greater than 0.05 then it is said to be significant and homogeneous.

3.5. T-test (Paired Sample t Test)

The t-test, specifically the Paired Sample t Test, is designed to examine the differences between two observations on the same subject, typically assessed before and after a treatment (Wahyuni et al., 2015). In decision-making for the t-test results (Paired Sample t Test), if the significance value (sig.) (two-tailed) is less than 0.05, it implies rejecting the null hypothesis (H_0) and accepting the alternative hypothesis (H_a). On the other hand, if the significance value (sig.) (two-tailed) is greater than 0.05, it leads to rejecting the alternative hypothesis (H_a) and accepting the null hypothesis (H_0).

Table 5. Paired Samples Test Results

		N	Correlation	Sig.
Pair 1	Pretest & Posttest	20	0,112	0,640
Pair 1	Pretest & Posttest	20	0,161	0,499
Pair 1	Pretest & Posttest	20	0,101	0,671

From the table above, the sig value can be seen. pretest – posttest SMK N 1 Salatiga $0.6 > 0.05$. Pretest-posttest SMK N 1 Kemusu $0.499 > 0.05$. Pretest – posttest SMKS Ma'arif NU 2 Boyolali $0.671 > 0.05$. So, it can be concluded that there is no relationship between the pretest variables and the posttest variables.

f. Effectiveness Test (*N-gain*)

In this testing phase, the researcher utilized both the pretest and posttest scores from the students, calculating the N-gain with a sample size (N) of 20.

Table 6. Interpretation of N-gain Effectiveness

Persentase %	Tafsiran
< 40	Ineffective
40-50	Less effective
56-75	Effective enough
>76	Effective

Sumber: Hake, R R, 2002

Table 7. N-gain Score Results

	SMK N 2 SALATIGA		SMK N 1 Kemusu		SMKS Ma'arif NU 2 Boyolali	
Nilai Minimum	42,86	42,86%	33,33	33,33%	16,67	16,67%
Nilai Maksimum	90,91	90,91%	91,67	91,67%	90,91	90,91%
Nilai RataRata	68,56	68,56%	61,03	61,03%	64,73	64,73%

The N-gain test results reveal that the average N-gain value for SMK N 2 Salatiga is 68.56%, categorizing it as "Quite Effective." Similarly, for SMK N 1 Kemusu, the average N-gain value is 61.03%, also falling into the "Quite Effective" category. Then the N-gain data for SMKS Ma'arif NU 2 Boyolali is 64.73% in the Quite Effective category.

The product developed in this research is learning media in the form of animated videos, which are implemented in the teaching of Islamic Religious Education within classroom settings. The development procedure used in developing this learning media was adapted from Instructional Media Design (Lee and Owens), namely the ADDIE model. Numerous prior studies have demonstrated that employing the Research and Development (R&D) method is effective in the successful development of learning media. Likewise, the PBL method and Quizwhizzer media are effectively used in classroom learning. The advantage of this research, compared to previous studies, lies in its testing of animated video learning media across three different schools. Previous research often concentrated solely on a single location, whereas this study broadened its scope by conducting research in multiple settings. If research is carried out by testing more people, then the media developed can be said to be feasible, because many people have tested it.

The utilization of animated video learning media is intended to facilitate students in comprehending the lesson more easily. Apart from that, teachers will also find it easier to convey the lesson material provided. Animation-based video media includes images and sound containing explanations. The animation video media for handling corpses provides images that help students more easily understand the subject matter, so that it can provide students with an understanding that is in line with their concrete and logical thinking. The choice of animation to create an animated video is tailored to the character of students who prefer visual images that make the content easier to understand. The use of bright colored images in animation makes students more interested in watching and learning.

Furthermore, the advantage of animated videos is the ability to explain material systematically. This is very useful in explaining the sequence of events such as the process of managing a corpse.

The aspiration is that future research endeavors will yield significantly improved outcomes, such as animated video media made in 3 dimensions so that it is livelier and more interesting for learning. To make the product or medium more convincing that it is appropriate for usage, the number of validators might be increased. To carry out research, you can add schools as research subjects. The more people researched, such as validators or research subjects, the better.

4. CONCLUSION

The development process for educational media in the form of animated videos follows the ADDIE method, which consists of five stages: Analysis, Design, Development and Production, Implementation, and Evaluation. The creation of educational media initiates with the analysis stage, followed by the media design stage, the actual development of learning media, validation involving assessments from expert lecturers, and ultimately, the conclusive field implementation tests.

The expert validation assessment was carried out by five validators. Expert assessment of animated video learning media was declared suitable and good for use as learning media. This is demonstrated by the outcomes of validation evaluations conducted by numerous lecturers and material experts with expertise in the media. The assessment results from expert lecturer validation were 4.46 in the good category.

The efficacy of PAI educational materials presented through animated videos was assessed in three schools: SMK Negeri 2 Salatiga, SMK Negeri 1 Kemusu, and SMKS Ma'arif NU 2 Boyolali. Each school takes research subjects from one class totaling 20 students. So, the total number of students used as research subjects was 60 students taken from three schools. The findings from the n gain test in the field research revealed that the average n gain value for SMK N 2 Salatiga was 68.56%, categorizing it as Quite Effective. SMK N 1 Kemusu demonstrated an n gain value of 61.03%, also falling within the Quite Effective category. Similarly, SMKS Ma'arif NU 2 Boyolali exhibited an n gain of 64.73%, placing it in the Quite Effective category as well.

REFERENCES

- [1] H. S. Wahyudi and M. P. Sukmasari, "Teknologi dan kehidupan masyarakat," *Jurnal Analisa Sosiologi*, vol. 3, no. 1, pp. 13–24, 2018.
- [2] I. F. Royana, "Pelestarian kebudayaan nasional melalui permainan tradisional dalam pendidikan jasmani," presented at the Seminar Nasional KeIndonesiaan II Tahun 2017 "Strategi Kebudayaan Dan Tantangan Ketahanan Nasional Kontemporer, FPIPSKR Universitas PGRI Semarang, Universitas PGRI Semarang, 2017, pp. 1–11.
- [3] H. S. Nizar, *Sejarah Sosial dan Dinamika Intelektual Pendidikan Islam di Nusantara*. Kencana, 2013.
- [4] A. Arifuddin and A. R. Karim, "Konsep Pendidikan Islam," *Didaktika: Jurnal Kependidikan*, vol. 10, no. 1, pp. 13–22, 2021.
- [5] A. Pasaribu, "Implementasi manajemen berbasis sekolah dalam pencapaian tujuan pendidikan nasional di madrasah," *EduTech: Jurnal Ilmu Pendidikan Dan Ilmu Sosial*, vol. 3, no. 1, 2017.
- [6] U.-U. R. Indonesia, "Sistem pendidikan nasional," *Jakarta: Direktorat Pendidikan Menengah Umum*, 2003.
- [7] D. Effendi and A. Wahidy, "Pemanfaatan teknologi dalam proses pembelajaran menuju pembelajaran abad 21," presented at the Prosiding Seminar Nasional Program Pascasarjana Universitas PGRI Palembang, 2019.
- [8] M. Miftah, "Pemanfaatan media pembelajaran untuk peningkatan kualitas belajar siswa," *Kwangsan: Jurnal Teknologi Pendidikan*, vol. 2, no. 1, pp. 1–12, 2014.
- [9] A. M. Wijaya, I. F. Arifin, and M. I. Badri, "Media pembelajaran digital sebagai sarana belajar mandiri di masa pandemi dalam mata pelajaran sejarah," *SANDHYAKALA Jurnal Pendidikan Sejarah, Sosial Dan Budaya*, vol. 2, no. 2, pp. 1–10, 2021.
- [10] T. I. B. Al-Tabany, *Mendesain model pembelajaran inovatif, progresif, dan kontekstual*. Prenada Media, 2017.
- [11] M. Mukminah, H. Hirlan, and S. Sriyani, "Analisis Kesulitan Belajar Berhitung Siswa Pada Mata Pelajaran Matematika Kelas IV SDN 1 Anyar," *Jurnal Pacu Pendidikan Dasar*, vol. 1, no. 1, pp. 1–14, 2021.
- [12] U. L. N. Latifah, H. Wakhyudin, and F. Cahyadi, "Miskonsepsi Penyelesaian Soal Cerita Matematika Materi FPB dan KPK Sekolah Dasar," *JRPD (Jurnal Riset Pendidikan Dasar)*, vol. 3, no. 2, pp. 181–195, 2020.
- [13] R. Febriana, *Kompetensi guru*. Bumi aksara, 2021.
- [14] A. P. Wulandari, A. A. Salsabila, K. Cahyani, T. S. Nurazizah, and Z. Ulfiah, "Pentingnya Media Pembelajaran dalam Proses Belajar Mengajar," *Journal on Education*, vol. 5, no. 2, pp. 3928–3936, 2023.
- [15] N. Nurdyansyah, "Media Pembelajaran Inovatif," 2019.
- [16] R. Rohani, "Media pembelajaran," 2020.
- [17] Y. Yunus and M. Fransisca, "Analisis kebutuhan media pembelajaran berbasis android pada mata pelajaran kewirausahaan," *Jurnal Inovasi Teknologi Pendidikan*, vol. 7, no. 2, pp. 118–127, 2020.
- [18] R. Abdullah, "Pembelajaran dalam perspektif kreativitas guru dalam pemanfaatan media pembelajaran," *Lantanida Journal*, vol. 4, no. 1, pp. 35–49, 2017.

- [19] K. Afdillah and T. Arfan, "Akademi desain animasi dengan pendekatan arsitektur nusantara," *Nature: National Academic Journal of Architecture*, vol. 4, no. 2, pp. 149–159, 2017.
- [20] A. Yudianto, "Penerapan video sebagai media pembelajaran," 2017.
- [21] R. Alfianistiawati, N. Istifayza, M. A. Prakris, F. K. Fitri, and D. W. Apriyadi, "Implementasi quizwhizzer sebagai media belajar digital dalam pembelajaran Sosiologi kelas X dan XI SMAN 8 Malang," *Jurnal Integrasi dan Harmoni Inovatif Ilmu-Ilmu Sosial*, vol. 2, no. 7, pp. 698–706, 2022.
- [22] D. Assyura, "Pengaruh Penggunaan Media Quizwhizzer Pada Model Pembelajaran Problem Based Learning (PBL) Untuk Meningkatkan Motivasi Dan Hasil Belajar Siswa Pada Materi Sistem Pencernaan Di Kelas VIII MTsN 4 Aceh Barat Daya," 2023.
- [23] S. Sumarni, "Model penelitian dan pengembangan (R&D) lima tahap (MANTAP)," 2019.
- [24] A. Hamzah, *Metode penelitian & pengembangan (research & development) uji produk kuantitatif dan kualitatif proses dan hasil dilengkapi contoh proposal pengembangan desain uji kualitatif dan kuantitatif*. CV Literasi Nusantara Abadi, 2021.
- [25] R. A. H. Cahyadi, "Pengembangan bahan ajar berbasis ADDIE model," *Halaqa: Islamic Education Journal*, vol. 3, no. 1, pp. 35–42, 2019.