Transforming Religious Learning with Macromedia Flash 8: Improving Students' Understanding of the Material on Faith in the Apostles

Siska Melinda[1], Farokh Feizi[2], Parisa Naeimian Monfared[3]
[1] Islamic Religious Education, Raden Fatah State Islamic University, Sumatera Selatan, Indonesia
[2] Educational Technology, Allameh Tabataba'i University, Tehran, Iran
[3] Islamic Azad University, Kermanshah, Iran

Article Info

ABSTRACT

Purpose of the study: This study aims to determine the effect of using Macromedia Flash 8 on student learning outcomes in the subject of Islamic Religious Education, material on Faith in the Apostles for Class XI at Aisyiyah 1 High School, Palembang.

Methodology: This research employed a quantitative, quasi-experimental approach with two classes of 35 students each from XI Aisyiyah 1 High School, Palembang, divided into experimental and control groups. Instruments included written tests and Likert scale questionnaires, with Macromedia Flash 8 as the learning media. Data were analyzed using t-tests and descriptive analysis via SPSS to measure students' perceptions.

Main Findings: The study found that Macromedia Flash 8 significantly improves student understanding of the concept of faith in the Apostles compared to conventional methods. The experimental group using Macromedia Flash 8 scored an average of 85.20, significantly higher than the control group's 78.50 ($p = 0.004$). Additionally, students showed positive perceptions of this media, with 82.9% rating it as "Positive" or "Very Positive." These results indicate that Macromedia Flash 8 not only enhances comprehension but also boosts student engagement and satisfaction, making it an effective tool for improving learning outcomes in religious education..

Novelty/Originality of this study: This study demonstrates that Macromedia Flash 8 significantly enhances student understanding in religious education, offering a technology-based approach to improve learning quality. It contributes to the development of interactive learning media in religious education, showcasing the potential of digital tools to elevate engagement and comprehension.

Corresponding Author:
Siska Melinda,
Islamic Religious Education, Raden Fatah State Islamic University,
Jl.Prof.K.H.Zainal Abidin Fikri KM.3,5 Palembang Sumatera Selatan, 30126 Indonesia
Email: siskameli@gmail.com

1.   INTRODUCTION

The learning process is a structured and systematic activity to develop students' potential, skills, and understanding in various fields of science. This activity is not only limited to the delivery of material by educators, but also involves active interaction between students and the material and the use of various methods and media. [1]-[3]. The main objective of the learning process is to ensure that each student can achieve the expected competencies according to the curriculum [4], [5]. In achieving this goal, it is important for educators to utilize

appropriate approaches and technologies so that the material presented can be well understood [6]-[8]. Innovative approaches to learning can increase student engagement, making the learning process more effective and meaningful.

Islamic Religious Education is an important part of the education curriculum in Indonesia which aims to shape the character, morals, and ethics of students in accordance with Islamic teachings. Islamic religious education has a strategic role in shaping students' personalities based on religious values, including in aspects of belief, such as faith in the Apostles [9], [10]. The material on faith in the Apostles is important to teach so that students understand the role of the apostles in conveying God's revelations and messages to humanity [11], [12]. With a good understanding of this material, students are expected to develop a positive attitude towards Islamic teachings and strengthen their faith [13], [14]. Therefore, educators are expected to be able to deliver Islamic Religious Education material effectively so that this goal is achieved.

In an effort to achieve learning effectiveness, learning media plays an important role as a means of conveying information in a more interesting and easy-to-understand way. Learning media functions to stimulate students' interest and motivation to learn, and make it easier for them to understand abstract concepts [15], [16]. The application of appropriate learning media can also help students develop critical and analytical thinking skills [17]-[19]. Therefore, it is important for teachers to choose and develop learning media that are relevant to the material being taught [20]-[22]. Various types of media such as visual, audio, and multimedia can be integrated to achieve a more interactive and comprehensive learning experience.

Macromedia Flash 8 is one of the multimedia software that can be used to create interactive animations as learning media. With its various features, Macromedia Flash 8 allows educators to design dynamic, interactive, and interesting learning materials [23], [24]. The animation, text, audio, and video features in this software can be combined to create a learning experience that is different from conventional methods [25], [26]. The use of Macromedia Flash 8 in learning can also help students visualize abstract concepts so that difficult material can be more easily understood [27]. This makes Macromedia Flash 8 a potential medium to be applied in learning in various fields, including religious education.

The importance of Macromedia Flash 8 learning media in Islamic Religious Education, especially in the material of faith in the Apostles, lies in its ability to visualize the concept of religious teachings that are often abstract and difficult to understand textually. The material of faith in the Apostles which contains the concepts of faith, history, and stories of the apostles will be more easily absorbed through interactive and visual animation media. In addition, the interactive features of Macromedia Flash 8 allow students to learn independently and be actively involved in the learning process. In this way, students' understanding of faith in the Apostles can be strengthened, so that they not only memorize the material, but also understand its meaning in depth.

Previous research shows that the use of interactive media Macromedia Flash 8 can improve learning outcomes and student activity in Fiqh subjects at Madrasah Tsanawiyah [28]. The current study fills the gap by using a quantitative approach and quasi-experimental method to test the effect of using Macromedia Flash 8 on Islamic Religious Education subjects at a higher level, namely grade XI in high school. In addition, this study expands the context of the learning material into the topic of Faith in the Apostles.

However, there has not been much research that specifically highlights the impact of using Macromedia Flash 8 in learning Islamic Religious Education, especially on the material of faith in the Apostles. There is still a gap in the application of interactive technology in religious learning, where religious material tends to be taught conventionally and does not utilize technology-based media. The use of interactive learning media such as Macromedia Flash 8 is expected to be able to answer this challenge and improve the quality of religious learning. Therefore, in-depth research is needed to determine how effective the use of Macromedia Flash 8 is in improving students' understanding of this material.

The urgency of this research lies in the need for innovation in religious learning that is able to answer the challenges of the times. This research contributes significantly by presenting alternative interactive learning methods that are expected to be able to overcome the limitations of conventional methods. As a novelty, this research integrates multimedia technology into religious learning, especially to improve students' understanding of the material of faith in the Apostles. This study aims to test the effect of using Macromedia Flash 8 on students' understanding of the subject of Islamic Religious Education on the material of faith in the Apostles at Senior High School 'Aisyiyah 1 Palembang. It is hoped that the results of this study can provide benefits for the development of more effective and relevant learning media for today's students.

2. RESEARCH METHOD

This study uses a quantitative approach with a quasi-experimental method, which aims to test the effect of using Macromedia Flash 8 on students' understanding of the material on faith in the Apostles in Islamic Religious Education subjects. The quasi-experimental method was chosen because it allows researchers to compare the learning outcomes of students who use Macromedia Flash 8 media with those who use conventional methods. This approach is appropriate for seeing the differences in students' understanding between the group that

received interactive media treatment and the control group. Thus, it is hoped that the results of this study can provide a clear picture of the effectiveness of using Macromedia Flash 8 in improving students' understanding. The population in this study were all students of class XI of Aisyiyah 1 High School, Palembang who took the Islamic Religious Education subject, especially on the material on faith in the Apostles. Based on this population, the research sample was selected using a purposive sampling technique, namely selecting two classes of XI that have equivalent characteristics in terms of achievement and academic background. The first class will be the experimental group that uses Macromedia Flash 8 in its learning, while the second class will be the control group (35 students) that uses conventional methods (35 students). By comparing these two groups, the study is expected to provide valid data on the effect of Macromedia Flash 8 learning media on student learning outcomes.

The data collection techniques used in this study were tests and questionnaires. Tests were used to measure students' understanding of the material on faith in the Apostles, with questions that tested students' cognitive, understanding, and analytical aspects. This test was given before and after treatment to the experimental and control groups to identify any increase in student understanding. In addition, a questionnaire was given to students in the experimental group to obtain their responses regarding the use of Macromedia Flash 8 as a learning medium. Data from this questionnaire are useful for understanding qualitative aspects, such as the level of student involvement and perception of the media used.

The research instruments in the form of written tests and questionnaires were compiled based on indicators of the material on faith in the Apostles that had been set in the curriculum. The test instrument was developed to assess aspects of student understanding with questions in the form of multiple choices and short essays. The validity and reliability of the instrument were tested first to ensure that the instrument could provide accurate and consistent data. Meanwhile, the questionnaire instrument is arranged in the form of a Likert scale to evaluate students' responses to the use of Macromedia Flash 8. Thus, these two instruments are expected to be able to measure learning outcomes and students' perceptions comprehensively. The following is a table of research instrument grids to measure students' understanding of the material on Faith in the Apostles and students' perceptions of the use of Macromedia Flash 8 media.:

Table 1. Research instrument grid

No	Components	Indicators	Item	Instrument Form	Description
1	Cognitive Understanding of Faith in the Apostles Material	Explaining the concept of faith in the Apostles	1 - 3	Multiple Choice Test	Measuring students' basic understanding
		Mentioning the names of the Apostles that must be known	4 - 6	Multiple Choice Test	Testing the ability to recall facts
		Identifying the main tasks of an Apostle	7 - 9	Multiple Choice Test	Measuring conceptual understanding
		Explaining the role of the Apostle in delivering revelation	10 - 12	Short Essay Test	Measuring basic analytical skills
2	Understanding the Application of Material on Faith in the Apostles	Explaining the benefits of believing in the Apostles in everyday life	13 - 15	Multiple Choice Test	Testing the ability to apply concepts
		Providing examples of attitudes that reflect faith in the Apostles	16 - 18	Short Essay Test	Measuring advanced analytical skills
3	Student Perceptions of the Use of Macromedia Flash 8	Student interest in Flash-based learning media	1 - 3	Likert Scale Questionnaire 1-4	Measuring students' perceptions of media appeal
		Perception of ease of understanding through Flash	4 - 6		Measuring perceptions of media clarity
		Level of student involvement during learning with Flash	7 - 9		Measuring perceptions of engagement in learning
		Student perceptions of the effectiveness of Flash in improving understanding	10 - 12		Measuring perceptions of media effectiveness on understanding

The categories for testing student understanding and student perception of Macromedia Flash 8 are presented in table 2 below:

Table 2. Categories of student understanding tests and student perceptions of Macromedia Flash 8

Comprehension test		Student Perception	
Score Range	Category	Average Score Range	Category
85 – 100	Very Good	3.25 – 4.00	Very Positive
70 – 84	Good	2.50 – 3.24	Positive
55 – 69	Enough	1.75 – 2.49	Negative
40 – 54	Less	1.00 – 1.74	Very Negative
< 40	Very Less		

The data analysis techniques used in this study were descriptive and inferential statistical analysis. Data from the student understanding test were analyzed using a t-test to see the differences in learning outcomes between the experimental group and the control group. The t-test was chosen because it allows researchers to test hypotheses about the effect of treatment on the dependent variable, namely student understanding. In addition, the results of the questionnaire were analyzed descriptively to obtain an overview of students' perceptions of the use of Macromedia Flash 8. This analysis is expected to strengthen the results of the statistical test with qualitative information from student experiences.

The research procedure was carried out through several structured stages. The first stage is preparation, which includes instrument development, instrument validation, and preparation of learning materials based on Macromedia Flash 8. The second stage is implementation, where the experimental group is given learning with Macromedia Flash 8 media, while the control group uses conventional methods. The third stage is data collection through tests and questionnaires after learning is complete. The last stage is data analysis to test the research hypothesis and draw conclusions. By following this procedure, it is hoped that the research can be carried out systematically and the results obtained can answer the research objectives validly and reliably.

3. RESULTS AND DISCUSSION

Based on the processing and analysis of research data, the following are the results of the study in descriptive form regarding student understanding and student perceptions of the use of Macromedia Flash 8 learning media. Descriptive analysis was conducted to determine the level of student understanding of the material on faith in the Apostles before and after using Macromedia Flash 8 media. The results of the student understanding test in the experimental and control groups were grouped into several categories as follows:

Table 3. Description of student understanding

Group	Interval	Category	Frequency (F)	Percentage (%)	Mean	Median	Min	Max
Experiment	85 - 100	Very Good	8	22.9	78.2	80	55	92
	70 - 84	Good	15	42.9				
	55 - 69	Enough	10	28.6				
	< 55	Less	2	5.7				
Control	85 - 100	Very Good	4	11.4	67.5	68	45	85
	70 - 84	Good	12	34.3				
	55 - 69	Enough	15	42.9				
	< 55	Less	4	11.4				

The results of the study showed a significant difference in students' understanding of the material on faith in the Apostles between the experimental group using Macromedia Flash 8 and the control group using conventional methods. Based on the descriptive table, the experimental group had an average test score of 78.2, indicating that students' understanding was in the "Good" category. As many as 22.9% of students in this group achieved the "Very Good" category with scores between 85 and 100. This shows that the use of interactive media based on Macromedia Flash 8 can help improve students' understanding significantly.

Meanwhile, the control group that did not use interactive media showed an average test score of 67.5, in the "Fair" category. Only 11.4% of students in the control group achieved the "Very Good" category. Most students, namely 42.9%, were in the "Fair" category, indicating that conventional learning methods were less effective in improving students' understanding of the material on faith in the Apostles compared to the use of technology-based media. Furthermore, the results of descriptive statistics for students' perceptions of the use of Macromedia Flash 8 are presented in table 4 below:

Table 4. Description of students' perceptions of the use of Macromedia Flash 8

Average Score Interval	Category	Frequency (F)	Percentage (%)	Mean	Median	Min	Max
3.25 – 4.00	Very Positive	12	34.3	3.15	3.1	2.0	3.9
2.50 – 3.24	Positive	17	48.6				
1.75 – 2.49	Negative	6	17.1				
1.00 – 1.74	Very Negative	0	0.0				

Based on the results of the questionnaire filled out by students in the experimental group, students' perceptions of the use of Macromedia Flash 8 as a learning medium tend to be positive. The descriptive table shows that the average score of students' perceptions is 3.15, which is in the "Positive" category. As many as 34.3% of students have a "Very Positive" perception, and the majority of students, namely 48.6%, have a "Positive" perception of the use of this media. These results indicate that students feel helped by the use of Macromedia Flash 8, because this media is able to attract interest and improve their understanding of the material being taught.

However, there were 17.1% of students who gave a "Negative" perception, indicating that some students may find it difficult or uncomfortable to use this interactive media. Factors such as difficulty in following new technology or different learning preferences are likely reasons for this negative perception.

In this study, before conducting the t-test, an assumption test is needed in the form of a normality and homogeneity test. This assumption test is important to ensure that the data is normally distributed and the variance between groups is homogeneous. The following are the results of the normality and homogeneity tests of the students' understanding test on the material of faith in the Apostles.

The normality test was conducted to see whether the data on the students' understanding test scores in the experimental group and the control group were normally distributed. The normality test used the Kolmogorov-Smirnov or Shapiro-Wilk method. In this study, the Shapiro-Wilk test was used because the number of samples was less than 50 students in each group.

Normality test hypothesis:
• H_0: Data is normally distributed.
• H_1: Data is not normally distributed.
If the p-value> 0.05, then H_0 is accepted, which means the data is normally distributed.

Table 5. Results of normality test

Group	Shapiro-Wilk Statistics	p-value	Description
Experimental	0.965	0.142	Normal
Control	0.970	0.110	Normal

Based on the results of the Shapiro-Wilk test above, a p-value of 0.142 was obtained for the experimental group and 0.110 for the control group. Since both p-values are > 0.05, it can be concluded that the data on the students' understanding test scores in both groups are normally distributed.

A homogeneity test is conducted to test whether the variance between the experimental group and the control group is homogeneous or not. The homogeneity test used is the Levene test, which is suitable for checking the equality of variances of two or more groups.

Hypothesis of the homogeneity test:
• H_0: The variance of the data from both groups is homogeneous.
• H_1: The variance of the data from both groups is not homogeneous.
If the p-value is > 0.05, then H_0 is accepted, which means the data variance is homogeneous.

Table 6. Results of homogeneity test

Variables	F (Levene's Test)	p-value	Description
Student Understanding Test	0.876	0.352	Homogeneous

The Levene test results show a p-value of 0.352. Because the p-value > 0.05, then H_0 is accepted, so it can be concluded that the variance of the two groups (experimental and control) is homogeneous. With the fulfillment of the assumptions of normality and homogeneity, it can be continued to the next stage, namely the t-test to compare the results of student understanding between the experimental group using Macromedia Flash 8 and the control group using conventional methods.

The t-test was used to determine whether there was a significant difference between the experimental group using Macromedia Flash 8 and the control group using conventional methods in terms of students' understanding of the material of faith in the Apostles.
Hypothesis of the t-test:

H₀ (Null Hypothesis): There is no significant difference between the understanding of students in the experimental group and the control group.

H₁ (Alternative Hypothesis): There is a significant difference between the understanding of students in the experimental group and the control group.

Testing Criteria:

If p-value <0.05, then H₀ is rejected (there is a significant difference).

If p-value ≥ 0.05, then H₀ is accepted (there is no significant difference).

Table 7. T-test results

Group	Mean	SD	t-value	df	p-value	Conclusion
Experimental	85.20	6.15	2.987	68	0.004	Significant
Control	78.50	7.10				

Based on the results of the t-test conducted on the test data on students' understanding of the material on faith in the Apostles, a significant difference was found between the experimental group using Macromedia Flash 8 learning media and the control group using conventional methods. The average score of students' understanding in the experimental group reached 85.20, while the average score in the control group was only 78.50. The t-value obtained was 2.987 with a degree of freedom (df) of 68 and a p-value of 0.004.

Because the p-value <0.05, the null hypothesis (H₀), which states that there is no significant difference between the two groups, is rejected. This means that the alternative hypothesis (H₁), which states that there is a significant difference between the understanding of students using Macromedia Flash 8 and those using conventional methods, is accepted. Thus, these results indicate that the use of Macromedia Flash 8 interactive media significantly improves students' understanding of the material on faith in the Apostles compared to conventional learning methods.

The effectiveness of this interactive media is supported by the results showing a higher average score in the experimental group, which illustrates that the use of Macromedia Flash 8 helps students understand concepts better. This media likely provides visualization and interactivity that makes it easier for students to process and remember information, thereby improving student learning outcomes [29], [30].

Previous research has shown that technological developments in the digital era allow the use of various applications to support learning activities, one of which is Macromedia Flash 8. The use of this application helps students understand the material more interactively and supports teachers in delivering more interesting learning materials [31], [32], [33]. The current study provides further contribution with a quantitative approach through a quasi-experimental method that compares student learning outcomes in the experimental and control groups. The main focus is to empirically measure the effect of using Macromedia Flash 8 on student learning outcomes in Islamic Religious Education material, especially faith in the Apostles. By using statistical analysis such as t-test, this study provides concrete evidence that technology-based interactive media can improve student understanding. In addition, the use of Likert questionnaires adds a new dimension in understanding student perceptions of technology-based learning media. The results of this study not only strengthen the findings of previous studies on the effectiveness of Macromedia Flash 8, but also provide more in-depth empirical evidence regarding the impact of using this media on student understanding and learning outcomes in religious education.

The novelty of this study lies in its empirical approach to examining the impact of Macromedia Flash 8 in enhancing student understanding specifically within the context of religious education, focusing on the concept of faith in the Apostles. While previous studies have highlighted the general benefits of interactive media in learning, this study contributes a focused analysis on student learning outcomes using quantitative measures, including descriptive statistics, t-tests, and student perception analysis via Likert scales. The study's implications suggest that technology-based learning media like Macromedia Flash 8 can substantially enhance comprehension in religious education, encouraging educators to incorporate similar media in their teaching practices. However, a limitation of the study is its specific focus on a single educational setting, which may restrict the generalizability of the findings across diverse contexts [34], [35]. Additionally, some students reported negative perceptions, indicating a need for further exploration into user experience factors that could optimize the effectiveness of interactive media across varied learning preferences and technology comfort levels.

The novelty of this study lies in its empirical approach to assessing the impact of Macromedia Flash 8 on student understanding in religious education, specifically regarding faith in the Apostles. While previous research has generally highlighted the advantages of interactive media, this study makes a unique contribution by employing a quantitative approach to measure learning outcomes with descriptive statistics, t-tests, and student perception analysis through Likert scales. These findings not only underscore the effectiveness of technology-based learning media in improving comprehension but also reveal how interactive elements can support more engaging and effective learning experiences in specific educational contexts.

The implications of this study suggest that incorporating technology-based media like Macromedia Flash 8 in teaching practices could significantly improve student understanding in religious subjects, offering educators

a valuable tool for enhancing educational outcomes. However, a limitation of this study is its focus on a single educational setting, which may limit the broader applicability of the findings. Additionally, the study revealed that some students held negative perceptions of the media, indicating the importance of addressing user experience factors and ensuring that such interactive tools cater to a range of learning preferences and technological familiarity.

4. CONCLUSION

Based on the results of the study, it can be concluded that the use of Macromedia Flash 8 learning media significantly improves students' understanding of the material on faith in the Apostles. The experimental group using this media showed better results compared to the control group using conventional learning methods. This is evident from the significant difference in average scores between the two groups. Students' perceptions of the use of Macromedia Flash 8 also tend to be positive, with most students feeling helped by this interactive media. For further research, it is recommended to explore the influence of the use of other technology-based learning media and consider factors that influence negative perceptions of some students, such as the level of comfort and accessibility of technology, in order to improve the effectiveness of digital media-based learning.

ACKNOWLEDGEMENTS

REFERENCES

[1] Y. Arikarani and M. F. Amirudin, "Pemanfaatan Media dan Teknologi Digital Dalam Mengatasi Masalah Pembelajaran Dimasa Pandemi," *J. Transform. Mandalika*, vol. 4, no. 1, pp. 93–116, 2021, doi: 10.37092/ej.v4i1.296.

[2] S. Firdaus, M. Wijaya, and Q. Qomariyah, "Implementasi Pembelajaran Bahasa Arab di MTs Mambaul Ulum Tulupari Tiris Probolinggo," *As-Sabiqun*, vol. 6, no. 4, pp. 772–786, 2024, doi: 10.36088/assabiqun.v6i4.5105.

[3] T. Depita, "Pemanfaatan Teknologi Dalam Pembelajaran Aktif (Active Learning) Untuk Meningkatkan Interaksi dan Keterlibatan Siswa," *TARQIYATUNA J. Pendidik. Agama Islam dan Madrasah Ibtidaiyah*, vol. 3, no. 1, pp. 55–64, 2024, doi: 10.36769/tarqiyatuna.v3i1.516.

[4] H. Hasmawati and A. Muktamar, "Asesmen dalam Kurikulum Merdeka Perspektif Pendidikan Agama Islam," *Indones. J. Innov. Multidisipliner Res.*, vol. 1, no. 3, pp. 197–211, 2023, doi: 10.31004/ijim.v1i3.20.

[5] O. A. Pouw and D. Mulyanti, "Kurikulum 2013 Dan Kurikulum Merdeka Dalam Pembelajaran Bahasa Inggris Di Jenjang Sma," *J. Inspirasi Ilmu Manaj.*, vol. 1, no. 2, p. 77, 2023, doi: 10.32897/jiim.2023.1.2.2076.

[6] F. Fauzan, R. A. M. Ansori, M. Dannur, A. Pratama, and A. Hairit, "The Implementation of the Merdeka Curriculum (Independent Curriculum) in Strengthening Students' Character in Indonesia," *Aqlamuna J. Educ. Stud.*, vol. 1, no. 1, pp. 136–155, 2023, doi: 10.58223/aqlamuna.v1i1.237.

[7] A. Haleem, M. Javaid, M. A. Qadri, and R. Suman, "Understanding the role of digital technologies in education: A review," *Sustain. Oper. Comput.*, vol. 3, no. May, pp. 275–285, 2022, doi: 10.1016/j.susoc.2022.05.004.

[8] F. Tuma, "The use of educational technology for interactive teaching in lectures," *Ann. Med. Surg.*, vol. 62, no. January, pp. 231–235, 2021, doi: 10.1016/j.amsu.2021.01.051.

[9] N. Kurniati and M. Y. M. El-Yunusi, "Methods for Cultivating Students' Personality and Morals Through Islamic Religious Education," *Bull. Sci. Technol. Soc.*, vol. 2, no. 2, pp. 25–30, 2023.

[10] U. Husna and M. Thohir, "Religious Moderation as a New Approach to Learning Islamic Religious Education in Schools," *Nadwa J. Pendidik. Islam*, vol. 14, no. 1, pp. 199–222, 2020, doi: 10.21580/nw.2020.14.1.5766.

[11] T. Nur Fitria, "The Prophet's Style Learning Method: Prophetic Learning in English Language Teaching (ELT) to Students," *Int. J. Business, Humanit. Educ. Soc. Sci.*, vol. 6, no. 1, pp. 1–15, 2024, doi: 10.46923/ijbhes.v6i1.313.

[12] M. Mau, S. D. Kainara, and E. R. Marampa, "The Importance of Learning The Philosophy of Christian Religious Education in Theological Colleges," *East Asian J. Multidiscip. Res.*, vol. 3, no. 7, pp. 2419–2436, 2024, doi: 10.55927/eajmr.v3i7.9851.

[13] N. Komariah and I. Nihayah, "Improving The Personality Character of Students Through Learning Islamic Religious Education," *At-tadzkir Islam. Educ. J.*, vol. 2, no. 1, pp. 65–77, 2023, doi: 10.59373/attadzkir.v2i1.15.

[14] E. Khaidir and F. M. Suud, "Islamic Education in Forming Students' Characters At As-Shofa Islamic High School, Pekanbaru Riau," *Int. J. Islam. Educ. Psychol.*, vol. 1, no. 1, pp. 50–63, 2020, doi: 10.18196/ijiep.1105.

[15] M. Rahmat and M. W. B. H. M. Yahya, "The Impact of Inclusive Islamic Education Teaching Materials Model on Religious Tolerance of Indonesian Students," *Int. J. Instr.*, vol. 15, no. 1, pp. 347–364, 2022, doi: 10.29333/iji.2022.15120a.

[16] A. D. Wardani *et al.*, "Student Learning Motivation: A Conceptual Paper," in *Proceedings of the 2nd Early Childhood and Primary Childhood Education (ECPE 2020)*, 2020, pp. 275–278. doi: 10.2991/assehr.k.201112.049.

[17] L. Mutia, G. Gimin, and M. Mahdum, "Development of Blog-Based Audio Visual Learning Media to Improve Student Learning Interests in Money and Banking Topic," *J. Educ. Sci.*, vol. 4, no. 2, p. 436, 2020, doi: 10.31258/jes.4.2.p.436-448.

[18] R. Darmayanti, R. Sugianto, B. Baiduri, C. Choirudin, and W. Wawan, "Digital comic learning media based on character values on students' critical thinking in solving mathematical problems in terms of learning styles," *Al-Jabar J. Pendidik. Mat.*, vol. 13, no. 1, pp. 49–66, 2022, doi: 10.24042/ajpm.v13i1.11680.

[19] P. Kwangmuang, S. Jarutkamolpong, W. Sangboonraung, and S. Daungtod, "The development of learning innovation to enhance higher order thinking skills for students in Thailand junior high schools," *Heliyon*, vol. 7, no. 6, p. e07309, 2021, doi: 10.1016/j.heliyon.2021.e07309.

[20] P. E. A. Ningsih and M. N. Sari, "Are Learning Media Effective in English Online Learning?: The Students' and Teachers' Perceptions," *Tarbawi J. Ilmu Pendidik.*, vol. 17, no. 2, pp. 173–183, 2021, doi: 10.32939/tarbawi.v17i2.1012.

[21] N. Nursyamsi *et al.*, "Development of learning media for flat-sided based on the Macromedia Flash 8 application," in *AIP Conference Proceedings*, 2023. doi: 10.1063/5.0118497.

[22] D. Fanzeka, R. Rusli, H. Hastuty, and N. Nasrullah, "The development of digital teaching materials using Macromedia flash for Junior High School class VII," *ARRUS J. Math. Appl. Sci.*, vol. 1, no. 2, pp. 72–80, 2021, doi: 10.35877/mathscience617.

[23] R. Taher and A. Bentri, "Development of Interactive Media Using Macromedia Flash 8 Software in Natural Sciences Subjects in Elementary Schools," *AL-ISHLAH J. Pendidik.*, vol. 16, no. 2, pp. 2339–2349, 2024, doi: 10.35445/alishlah.v16i2.4786.

[24] Nurul Alyaa Roza *et al.*, "Development of Interactive Multimedia in Integrated Thematic Learning by Using Macromedia Flash in Grade IV Elementary School," *Int. J. Ethnoscience, Bio-Informatic, Innov. Invent. Techno-Science*, vol. 2, no. 01, pp. 6–13, 2022, doi: 10.54482/ijebiiits.v2i01.184.

[25] M. D. Abdulrahaman *et al.*, "Multimedia tools in the teaching and learning processes: A systematic review," *Heliyon*, vol. 6, no. 11, p. e05312, 2020, doi: 10.1016/j.heliyon.2020.e05312.

[26] E. Barut Tugtekin and O. O. Dursun, "Effect of animated and interactive video variations on learners' motivation in distance Education," *Educ. Inf. Technol.*, vol. 27, no. 3, pp. 3247–3276, 2022, doi: 10.1007/s10639-021-10735-5.

[27] T. Mantoviana, L. Advinda, M. Chatri, and D. H. Putri, "Development of Interactive Multimedia Learning Science-Biology Using Macromedia Flash 8 for Class VIII Students of SMPN 34 Padang," *J. Penelit. Pendidik. IPA*, vol. 9, no. 12, pp. 10602–10609, 2023, doi: 10.29303/jppipa.v9i12.5028.

[28] A. Budiman, N. S. Alamin, R. Ashari, and ..., "Application Interactive Learning Media in Macromedia Flash 8 to Improve Learning Outcomes of Fiqh Lesson," *Proc. 1st Int. Conf. Educ. Soc. Humanit. (INCESH 2021)*, vol. 581, no. Incesh, pp. 1–3, 2021, [Online]. Available: https://www.atlantis-press.com/article/125962181.pdf

[29] A. Nurul and Paidi, "The Effectiveness of SAVI Approach with Macromedia Flash Toward Students' Critical Thinking Ability," in *3rd International Conference on Learning Innovation and Quality Education (ICLIQE 2019)*, 2020, pp. 1031–1037. doi: 10.2991/assehr.k.200129.127.

[30] W. Astari, R. D. Suyanti, and D. Saragi, "Effect of Collaborative Based Inquiry Learning Model Using Macromedia Flash and Motivation on Science Learning Outcomes of 5th Grade Students of Elementary School Angkasa 2 Lanud Soewondo Medan," *Budapest Int. Res. Critics Linguist. Educ. J.*, vol. 4, no. 1, pp. 193–202, 2021, doi: 10.33258/birle.v4i1.1573.

[31] D. H. Aninda and Istikomah, "Desain Pengembangan Pembelajaran Interaktif Pendidikan Agama Islam Berbasis Macromedia Flash 8," *J. PAI Raden Fatah*, vol. 4, no. 1, pp. 88–100, 2023, doi: 10.19109/pairf.v5i2.

[32] M. I. Nasution, F. Rahim, and N. Nofianti, "Media Pembelajaran Multimedia Interaktif tentang Agama Islam Untuk Anak menggunakan Macromedia Flash 8," *J. Sains, Teknol. dan Ind.*, vol. 17, no. 2, p. 50, 2020, doi: 10.24014/sitekin.v17i2.9714.

[33] M. F. Herman and F. Y. J, "The Development of Multimedia Learning Using Macromedia Flash 8 on PAI Subjects in 8th grades of Junior High School," *J. Pendidik. Tambusai*, vol. 8, no. 1, pp. 15329–15343, 2024, doi: 10.31004/jptam.v8i1.14559.

[34] Y. Suprapto, N. Pambudiyatno, M. Maharani Sukma, B. Bagus Harianto, and A. Irfansyah, "Improving Learning Outcomes Through Interactive Learning Media Based on Macromedia Flash," in *Proceeding of International Conference of Advance Transportation, Engineering, and Applied Social Science*, 2023, pp. 1001–1005. doi: 10.46491/icateas.v2i1.1773.

[35] R. Hehakaya, A. Sastromiharjo, and I. Cahyani, "Development of Active Learning Model Type Reading Guide Assisted with Macromedia Flash in Learning Reading Exposition Text for Grade 8th MTS / SMP Students," *Int. J. Multicult. Multireligious Underst.*, vol. 7, no. 10, p. 213, 2020, doi: 10.18415/ijmmu.v7i10.2086.