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Effects of the Madrasah Research Program and Flipped Classroom on Students' Digital Literacy in an Indonesian Madrasah

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Abstrak— Pengembangan literasi digital peserta didik menjadi penting untuk mempersiapkan keterampilan abad ke-21 di era digital. Penelitian ini bertujuan untuk mengetahui pengaruh Program Madrasah Riset dan model pembelajaran *Flipped Classroom* terhadap kemampuan literasi digital siswa di MAN 1 Gresik. Penelitian ini menggunakan desain kuantitatif kausal-komparatif dengan sampel 60 siswa yang dipilih melalui purposive sampling. Data dikumpulkan menggunakan angket yang telah diuji validitas dan reliabilitasnya, kemudian dianalisis dengan statistik deskriptif, uji asumsi klasik, dan regresi linier berganda. Hasil penelitian menunjukkan bahwa Program Madrasah Riset secara signifikan meningkatkan literasi digital melalui kegiatan riset rutin dan evaluasi informasi, sedangkan *Flipped Classroom* mendukung pembelajaran mandiri berbasis teknologi. Kedua pendekatan secara bersama-sama menjelaskan 60,5% variasi kemampuan literasi digital siswa. Temuan ini menunjukkan bahwa integrasi program riset dan pembelajaran berbasis teknologi menciptakan lingkungan belajar yang lebih aktif, mandiri, dan berorientasi pada keterampilan abad ke-21, meskipun faktor eksternal seperti akses digital dan dukungan keluarga juga memengaruhi hasil.

Kata Kunci: *Flipped; Classroom*; Literasi; Digital.

Abstract— *Fostering students' digital literacy is essential for preparing them with 21st-century skills in the digital era. This study aims to examine the effect of the Research Madrasah Program and the Flipped Classroom learning model on students' digital literacy skills at MAN 1 Gresik. A quantitative, causal-comparative design was employed involving 60 students selected through purposive sampling. Data were collected using validated and reliable questionnaires and analyzed using descriptive statistics, classical assumption tests, and multiple linear regression. The results show that the Research Madrasah Program significantly enhances digital literacy through habitual research activities and information evaluation, while the Flipped Classroom supports independent, technology-based learning. Together, they explain 60.5% of the variance in students' digital literacy. These findings imply that integrating research-oriented programs with technology-driven pedagogy creates an active, self-directed, and skill-oriented learning environment, although external factors such as digital access and home support also influence outcomes.*

Keywords: *Flipped; Classroom; Digital; Literacy.*

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I. INTRODUCTION

Traditional learning that positions teachers as the primary source of information remains a dominant practice within educational systems, including madrasahs [1]. His model emphasizes one-way knowledge transmission, in which students primarily listen and receive information with limited opportunities for interaction. Numerous studies indicate that such an approach often leads to learning fatigue, reduced concentration, and weak conceptual understanding, as students tend to be passive and insufficiently engaged in the process of knowledge construction [2], [3]. These conditions highlight the urgent need for pedagogical innovation to increase student participation and engagement, particularly through the integration of educational technology [4], [5].

Rapid technological advancement has spurred the emergence of various innovative learning models, including blended learning, which combines online and face-to-face instruction.[6] A further transformation of this approach is the flipped classroom model, which reverses the conventional learning structure: students study instructional materials at home through videos, digital modules, or other online resources, while classroom time is devoted to discussion, problem-solving, and application of concepts [7], [8]. Empirical evidence shows that this model enhances student engagement and deepens conceptual understanding, as learning activities no longer limit themselves to information reception but extend to knowledge elaboration and application [9], [10].

At the same time, madrasahs as Islamic educational institutions are increasingly required to adapt to digital developments [11]. The Madrasah Riset Program, launched by the Ministry of Religious Affairs in 2013, was designed to strengthen scientific culture, research skills, and students' access to technology-based learning resources [12]. The implementation of this program encourages students to actively search for, process, and verify information through research-oriented activities. At MAN 1 Gresik, technological initiatives have been further reinforced by barcode-based learning systems and digital platforms that provide rapid access to information, enabling the integration of research culture with technology-supported learning activities[13].

However, previous studies indicate a theoretical gap that remains insufficiently addressed. Walid et al. reported that the Madrasah Riset Program effectively enhances digital literacy through the optimization of digital libraries and technology-based training; however, their study did not examine its integration with classroom-based learning models [14]. Zheng et al.'s study found that the flipped classroom approach was effective in improving students' academic

performance and learning motivation. However, it did not specifically examine research-based madrasah programs [15]. Similarly, Anggi et al. revealed that the flipped classroom model improves students' scientific literacy, but did not explicitly focus on digital literacy nor apply the model in a research-oriented madrasah context [16]. Moreover, most previous studies have examined only a single pedagogical intervention, whereas the challenges of digital literacy in an era characterized by the proliferation of hoaxes, misinformation, and disinformation demand more comprehensive pedagogical approaches [6], [17].

The research gap is more evident due to the scarcity of studies investigating the simultaneous integration of an institutional program (Madrasah Riset) and an innovative pedagogical model (flipped classroom) to enhance students' digital literacy. No prior research has comprehensively explored how these two approaches complement one another: the Madrasah Riset Program strengthens information-searching and verification skills through research-based activities, while the flipped classroom model enhances students' abilities to analyze and apply digital information within learning processes. Theoretically, both approaches have the potential to create an interactive, critical, and collaborative learning ecosystem; however, this synergy has not yet been examined within the context of public madrasahs such as MAN 1 Gresik.

In response to this research gap, the present study introduces a novel contribution by conducting an integrative analysis of the combined effects of the Madrasah Riset Program and the flipped classroom learning model on students' digital literacy skills. The contributions of this study include: (1) providing new insights into the synergy between institutional programs and pedagogical innovations in enhancing 21st-century competencies, (2) enriching the body of literature on digital learning models in madrasahs, and (3) offering practical recommendations for madrasahs in designing more effective, adaptive, and contextual strategies for improving digital literacy. Accordingly, this study is expected to make both theoretical and practical contributions to advancing Islamic education in the era of digital transformation.

Operationally, digital literacy skills in this study are defined as students' capacity to access, understand, evaluate, process, and use digital information critically, ethically, and responsibly to support learning activities and academic problem-solving [18]. Digital literacy encompasses not only technical skills related to using digital devices and platforms, but also higher-order cognitive abilities such as evaluating the credibility of information sources, identifying hoaxes, synthesizing information, and engaging in technology-based communication and collaboration. In the context of madrasah education, digital literacy also involves integrating

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Islamic values with ethical and responsible practices in the use of information and communication technologies. Accordingly, digital literacy is positioned as a core twenty-first-century competence that can be effectively developed through research-based pedagogical approaches and active learning models.

Based on this conceptual framework, this study aims to determine whether the Madrasah Research Program has a significant effect on students' digital literacy skills, whether the flipped classroom learning model has a significant effect on students' digital literacy skills, and whether both factors together have a significant effect on students' digital literacy skills at MAN 1 Gresik. The research hypotheses state that (H1) the Madrasah Research Program, (H2) the flipped classroom model, and (H3) both simultaneously have a positive and significant effect on students' digital literacy skills, because the integration of research culture and technology-based learning is believed to strengthen critical thinking skills and the use of digital information.

II. RESEARCH METHOD

Research Design

This study employed a quantitative approach with an explanatory research design, aiming to examine the causal relationships between independent variables and a dependent variable through hypothesis testing. Multiple linear regression analysis was used to assess the simultaneous effects of two or more independent variables on a single dependent variable. According to Hair et al., multiple linear regression is an appropriate analytical technique for modeling and predicting relationships among variables in social and educational research when the data are measured on interval or ratio scales [19]. In this study, the independent variables were the Madrasah Research Program (X_1) and the flipped classroom learning model (X_2), and the dependent variable was students' digital literacy skills (Y).

Research Participants

The study was conducted at MAN 1 Gresik, with research participants comprising students engaged in learning activities under the Madrasah Research Program. A total of 60 students were selected as the research sample using simple random sampling. This sampling method was used because the population was considered relatively homogeneous in terms of academic characteristics and learning experiences, allowing each member an equal opportunity

to be included in the sample [20]. The use of simple random sampling was intended to reduce selection bias and enhance the generalizability of the research findings.

Research Instruments

Data were collected using a closed-ended questionnaire consisting of structured statements developed based on the indicators of each research variable. The instrument employed a five-point Likert scale, with response options ranging from strongly agree (5), agree (4), neutral (3), disagree (2), to strongly disagree (1) for positively worded items. Conversely, negatively worded items were scored in reverse order [21]. The validity of the instrument was examined using the Pearson Product-Moment correlation at a significance level of 0.05, while instrument reliability was tested using Cronbach's Alpha coefficient, with an alpha value of 0.70 or higher indicating acceptable reliability [22],[23].

Research Procedures

The research procedures began with developing the research instrument based on theoretical frameworks and predefined variable indicators. A pilot test was then conducted to assess the instrument's validity and reliability. After the instrument was confirmed to be valid and reliable, the questionnaire was administered directly to the students within the learning context. Participants completed the questionnaire independently under the researcher's supervision to ensure objectivity and data completeness. The collected data were subsequently coded and prepared for statistical analysis.

Data Analysis

The data were analyzed using quantitative statistical techniques with the assistance of statistical software. The analysis procedures included descriptive statistics to summarize the data characteristics, prerequisite assumption tests (normality, linearity, and multicollinearity), and multiple linear regression analysis to test the proposed research hypotheses [24]. The regression analysis was conducted to determine both the partial effects of each independent variable on the dependent variable and the simultaneous effects of the independent variables on students' digital literacy skills [25]. Hypothesis testing decisions were made based on significance values (p-values) at a 0.05 level of significance.

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III. RESULT AND DISCUSSION

Based on data analysis from the research sample, this study examines the Research Madrasah Program, the flipped classroom learning design, and students' digital literacy skills. The interpretation of the results is presented as follows.

Descriptive statistics

The mean, maximum, minimum, and standard deviation values of each variable in the study were all examined in descriptive statistical analysis. The analysis findings are shown in Table 1.

TABLE 1. DESCRIPTION OF DESCRIPTIVE STATISTICS RESULTS

	N	Minimum	Maximum	Mean	Std. Deviation
Madrasah Research	60	35	48	42.93	2.583
Flipped Classroom	60	36	49	42.63	2.584
Digital Literacy Skills	60	39	48	43. 92	2.069
Valid N (Listwise)	60				

The study included 60 students as respondents. The Research Madrasah variable produced scores in the range 35–48, with a mean of 42.93 and a standard deviation of 2.583. The Flipped Classroom variable recorded values ranging from 36 to 49, with an average score of 42.63 and a standard deviation of 2.584. Meanwhile, the Digital Literacy Ability variable, measured among the same 60 students, yielded scores ranging from 39 to 48, with a mean of 43.92 and a standard deviation of 2.069. Based on the data distribution, this variable's scores ranged from 39 to 48.

Instrument Validity dan Reliability Test

Based on data collected using questionnaire-based instruments, validity and reliability were assessed. Instrument validity was tested using the Pearson Product-Moment Correlation at a significance level of 0.05 (5%), with $r_{60} = 0.25$. An item is considered valid if the calculated r-value exceeds the r-table value. Statistical analysis using IBM SPSS indicated that all items on the research instrument were valid.

Instrument reliability was tested using the Cronbach's Alpha coefficient, and an instrument is considered to have high reliability if $r_{60} \geq 0.25$. The results of the IBM SPSS Statistics analysis showed that the instrument used in this study demonstrated very high reliability,

with a significance value of 0.728 ≥ 0.25. These findings indicate that the research instrument has strong internal consistency and is suitable for measuring the effects of the Research Madrasah Program and the flipped classroom learning model on students' digital literacy skills.

Classical Assumption Test

Liniearity Test

The linearity test is used to determine whether a significant linear relationship exists between two variables. A linear relationship between the predictor variable (X) and the criterion variable (Y) is assumed if the significance value is greater than 0.05. The results of the linearity test (ANOVA table) in Table 4 show that the significance value for linearity between Research Madrasah (X1) and Flipped Classroom (X2) is 1.000 ≥ 0.05, and the significance value for deviation from linearity is 0.194 ≥ 0.05. Thus, the data can be adequately explained by linear regression at a significance level ≥ 0.05.[26]

Normality Test

The normality test was conducted to determine whether the collected data followed a normal distribution. Data are assumed to be normally distributed if the significance value exceeds 0.05. The normality test results for the Research Madrasah Program, the Flipped Classroom learning model, and students' Digital Literacy Skills at MAN I Gresik yielded significance values of 0.06, 0.265, and 0.089, respectively, all of which exceeded 0.05. Therefore, it can be concluded that the normality assumption is satisfied.

Multicollinearity Test

Multicollinearity occurs when there is a strong linear relationship between two or more independent variables in a multiple regression model. Multicollinearity is indicated if the Variance Inflation Factor (VIF) exceeds 5 or 10. The results of the multicollinearity test show that both the Research Madrasah Program and the Flipped Classroom variables have tolerance values of 0.566 (> 0.100) and VIF values of 1.768 (< 10.00). These results indicate that no multicollinearity issues are present in the regression model.

Autocorrelation Test

The Durbin–Watson test was used to determine whether autocorrelation exists in the regression residuals. A Durbin–Watson value between −2 and +2 indicates no autocorrelation. The test results show a Durbin–Watson value of 1.591, which falls within the acceptable range. Thus, it can be concluded that there is no autocorrelation in the regression model.

Multiple Linear Regression Test

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Multiple linear regression analysis was conducted to examine the effects of two or more independent variables on the dependent variable. This analysis produces a regression equation that reflects the direction and strength of each independent variable's influence on digital literacy skills. A positive constant value indicates that even without intervention from the Research Madrasah Program and the flipped classroom model, students still possess a basic level of digital literacy.

The positive regression coefficient for the Research Madrasah Program variable indicates that greater intensity and quality of program implementation significantly improve students' digital literacy skills. The regression equation obtained using SPSS is presented as follows:

$$\boldsymbol{Y = a + b_1X_1 + b_2X_2 \ldots\ldots + b_kX_k}$$

$$Y = 15.706 + 0.536X_1 + 0.122X_2.$$

The constant value (α) of 15.706 indicates that when the Research Madrasah and flipped classroom variables are held constant, the value of Y is 15.706. The regression coefficient for the Research Madrasah variable (X1) is 0.536, indicating that a one-unit increase in Research Madrasah, holding other variables constant, increases digital literacy skills by 0.536.

The regression coefficient for the flipped classroom variable (X2) is 0.122, indicating a positive effect. This means that a one-unit increase in the flipped classroom variable, assuming other variables remain constant, increases digital literacy skills by 0.122, although the contribution is relatively smaller than that of the Research Madrasah Program.

Coefficient of Determination (R Square)

The coefficient of determination (R-squared) measures the percentage of variance in the dependent variable explained by the independent variables. The SPSS "Model Summary" output shows an R-Square of 0.605 (60.5%). This indicates that the Research Madrasah Program (X1) and Flipped Classroom (X2) together explain 60.5% of the variance in students' Digital Literacy Skills (Y), while the remaining 39% is attributable to variables not included in the regression model.

Hypothesis Testing (t-Test and f-Test)

The t-test was conducted to examine the partial effects of each independent variable on the dependent variable, using a significance level of 0.05. The first hypothesis states that the Research Madrasah Program (X1) has a positive effect on Digital Literacy Skills (Y). The results

show a p-value ≤ 0.05, indicating that H_1 is accepted and H_0 is rejected. This means that the Research Madrasah Program has a significant effect on students' digital literacy skills.

The second hypothesis states that the flipped classroom (X2) has a positive effect on Digital Literacy Skills (Y). The results show a significance value of 0.174 > 0.05, indicating that H_2 is rejected and H_0 is accepted. Thus, the flipped classroom does not have a statistically significant effect on digital literacy skills. The F-test was conducted to examine the simultaneous effect of the independent variables on the dependent variable. The results show a significance value of 0.001 ≤ 0.05, indicating that the Research Madrasah Program and the flipped classroom jointly have a significant effect on students' digital literacy skills.

Partial hypothesis testing indicates that the Research Madrasah Program has a positive and significant effect on students' digital literacy skills, suggesting that strengthening research culture in madrasahs encourages students to critically evaluate and use digital information. Although the flipped classroom shows a positive influence, its effect is not statistically significant, suggesting that its effectiveness depends on implementation quality, student readiness, and integration within a supportive learning ecosystem. Nevertheless, the simultaneous test results demonstrate that the Research Madrasah Program and the flipped classroom together significantly influence students' digital literacy skills. This finding provides empirical evidence that synergy between institutional programs and pedagogical innovation represents an effective approach to enhancing digital literacy among madrasah students.

The descriptive analysis results show that the Research Madrasah Program and the flipped classroom model were in the high category, with average scores of 42.93 and 42.63, respectively. Meanwhile, students' digital literacy skills were categorized as high, with a mean score of 43.92. These findings indicate that a learning environment that emphasizes research activities and prior understanding-based learning before face-to-face learning can improve digital literacy. A comparison of average scores shows that digital literacy skills slightly exceed those of the two intervention variables, indicating that implementing both programs provides a positive boost to students' digital competencies.

The F-test provides statistical evidence that the Madrasah Research Program and the Flipped Classroom have a significant effect on digital literacy skills, with a significance value of 0.001 < 0.05 and an R-Square of 0.605. This means that 60.5% of the variation in students' digital literacy skills can be explained by the two learning models. This finding indicates that when both approaches are implemented alongside a strengthened culture of research and activity-based

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digital learning, students gain a richer learning experience and can effectively access, verify, and manage digital information.

The t-test results show that Madrasah Research partially has a significant influence on digital literacy, while the flipped classroom is not significant individually but becomes significant when combined with Madrasah Research. This shows that the effectiveness of the Flipped Classroom requires a strong learning ecosystem that includes research habits and digital data exploration activities. The regression equation Y = 15.706 + 0.536X1 + 0.122X2 indicates that the contribution of the Research Madrasah is more pronounced than that of the Flipped Classroom, but both still complement each other in shaping students' digital literacy competencies. This finding aligns with research by Walid et al. and Maqsudah, which shows that the Madrasah Research program can improve digital literacy through research training activities, exploration of digital sources, and use of technology-based libraries.[14], [27] The research program encourages students to become accustomed to critically searching for, selecting, and processing digital information. Meanwhile, research by Fatimah and Darmawan et al. confirms that the flipped classroom increases active participation, digital understanding, and the ability to use online learning media[6], [28]. Thus, both approaches have a conceptual alignment that reinforces each other.

Overall, the integration of the flipped classroom approach into the Research and Development Madrasah Program has had a more comprehensive positive impact on students' digital literacy development. Research on Madrasah emphasizes habituation to scientific processes, while the flipped classroom optimizes technology use for independent and collaborative learning. The collaboration of these two approaches creates a learning experience oriented toward information retrieval, analysis, and critical reflection, core competencies in 21st-century digital literacy. However, the remaining 39.5% of the variation in digital literacy skills is attributable to factors beyond the variables examined in this study, such as access to technology at home, family support, patterns of digital media use, and digital ethics skills. Therefore, strengthening digital literacy cannot rely solely on pedagogical innovation but also requires a safe, structured, and ethical digital learning environment. Schools and teachers need to ensure that students are not only proficient with technology but also understand the risks and responsibilities of the digital ecosystem.

The findings of this study are also in line with international studies, which show that successful flipped classrooms and research-based programs are heavily influenced by students' digital readiness. A. Sirakaya and Ozdemir's study found that the flipped classroom increases motivation and learning independence, competencies closely related to digital literacy.[29] Rahmatika et al.'s systematic study also confirms that flipped learning encourages critical thinking and higher-order cognitive activities in digital learning[30]. Furthermore, Baig and Yadegaridehkordi's study showed that LMS, digital content, and collaborative platforms are the foundation of effective learning.flipped classroomin improving students' digital performance.[10] Improving digital literacy in Islamic educational institutions such as madrasas depends heavily on users' readiness to adopt technology ethically and productively.[31] Thus, the findings of this study are not only in line with previous research but also reinforce the argument that integrating the Madrasah Research and Development Program with the flipped classroom approach is an effective pedagogical strategy for enhancing digital literacy.

IV. CONCLUSION

The study demonstrates that the Research Madrasah Program and the Flipped Classroom learning model significantly influence students' digital literacy skills at MAN 1 Gresik. The Research Madrasah Program exerts a dominant effect by fostering habitual research activities, promoting the exploration of digital sources, and strengthening students' information-evaluation skills. Meanwhile, the Flipped Classroom supports digital literacy development through technology-based independent learning, pre-class engagement with digital materials, and in-class activities that emphasize analysis and application of information. Collectively, these approaches explain 60.5% of the variance in students' digital literacy skills, highlighting that integrating research-oriented programs and technology-driven pedagogy creates a more active, self-directed, and 21st-century skills-oriented learning environment.

These findings suggest that combining research programs with flipped learning models can serve as an effective pedagogical strategy for enhancing digital literacy in madrasah contexts. Educational practitioners are encouraged to strengthen the implementation of research-based activities and to systematically integrate technology to cultivate students' critical thinking, independent learning, and digital competencies. Moreover, the study emphasizes the importance of a supportive learning ecosystem that includes access to digital devices, family support, consistent use of digital tools, and responsible technology use. Despite the significant findings,

39.5% of the variation in digital literacy skills is attributable to external factors not covered in this study, such as digital access, home environment, personal digital habits, and ethical use of technology. Future research should explore these contextual and environmental factors to develop a more comprehensive understanding of digital literacy development. Additionally, longitudinal studies could examine the long-term effects of integrating research programs and flipped classrooms across diverse madrasah settings, while experimental designs may further assess the impact of varying implementation strategies on digital literacy outcomes.

REFERENCES

[1] D. H. Tong, B. P. Uyen, And L. K. Ngan, 'The Effectiveness Of Blended Learning On Students' Academic Achievement, Self-Study Skills And Learning Attitudes: A Quasi-Experiment Study In Teaching The Conventions For Coordinates In The Plane', *Heliyon*, Vol. 8, No. 12, P. E12657, 2022, Doi: 10.1016/J.Heliyon.2022.E12657.

[2] R. Cassibba, D. Ferrarello, M. F. Mammana, P. Musso, M. Pennisi, And E. Taranto, 'Teaching Mathematics At Distance: A Challenge For Universities', *Education Sciences*, Vol. 11, No. 1, Pp. 1–20, 2021, Doi: 10.3390/Educsci11010001.

[3] A. Kozanitis And L. Nenciovici, 'Effect Of Active Learning Versus Traditional Lecturing On The Learning Achievement Of College Students In Humanities And Social Sciences: A Meta-Analysis', *Higher Education*, No. 0123456789, 2022, Doi: 10.1007/S10734-022-00977-8.

[4] R. F. Schmid, E. Borokhovski, R. M. Bernard, D. I. Pickup, And P. C. Abrami, 'A Meta-Analysis Of Online Learning , Blended Learning , The Flipped Classroom And Classroom Instruction For Pre-Service And In-Service Teachers', *Computers And Education Open*, Vol. 5, No. June, P. 100142, 2023, Doi: 10.1016/J.Caeo.2023.100142.

[5] J. S. Bernard, 'The Flipped Classroom: Fertile Ground For Nursing Education Research.', *International Journal Of Nursing Education Scholarship*, Vol. 12, Jul. 2015, Doi: 10.1515/Ijnes-2015-0005.

[6] W. Darmawan, D. Kuswandi, And H. Praherdhiono, 'Pengaruh Blended Learning Berbasis Flipped Classroom Pada Mata Pelajaran Prakarya Terhadap Hasil Belajar Siswa Kelas X Smk', *Edcomtech Jurnal Kajian Teknologi Pendidikan*, Vol. 5, No. 2, Pp. 170–179, 2020, Doi: 10.17977/Um039v5i22020p170.

[7] C.-J. Chung, C.-L. Lai, And G.-J. Hwang, 'Roles And Research Trends Of Flipped Classrooms In Nursing Education: A Review Of Academic Publications From 2010 To 2017', *Interactive Learning Environments*, Vol. 29, No. 6, Pp. 883–904, 2021, Doi: 10.1080/10494820.2019.1619589.

[8] W. U. Tanjung And D. Namora, 'Kreativitas Guru Dalam Mengelola Kelas Untuk Mengatasi Kejenuhan Belajar Siswa Di Madrasah Aliyah Negeri', *Jurnal Pendidikan Agama Islam Al-Thariqah*, Vol. 7, No. 1, Pp. 199–217, 2022.

[9] Eva Latipah, 'Effective Teaching In Psychological Perspective: Pai Teacher Knowledge And Skills', *Jurnal Pendidikan Agama Islam*, Vol. 18, No. 2, Pp. 215–226, 2021, Doi: 10.14421/Jpai.2021.182-01.

[10] M. I. Baig And E. Yadegaridehkordi, 'Flipped Classroom In Higher Education: A

Systematic Literature Review And Research Challenges', *International Journal Of Educational Technology In Higher Education*, Pp. 4–26, 2023, Doi: 10.1186/S41239-023-00430-5.

[11] A. Wildan, T. Bahja, And L. Hakim, 'Literature Review: Analisis Model Pembelajaran Efektif Dalam Implementasi Kurikulum Merdeka Di Sekolah', *Konstruktivisme: Jurnal Pendidikan Islam*, Vol. 17, No. 1, Pp. 11–28, 2025, Doi: 10.35457/Konstruk.V17i1.3651.

[12] U. Hidayati, 'Inovasi Madrasah Melalui Penyelenggaraan Madrasah Riset', *Edukasi: Jurnal Penelitian Pendidikan Agama Dan Keagamaan*, Vol. 17, No. 3, Pp. 238–255, 2019, Doi: 10.32729/Edukasi.V17i3.636.

[13] H. M. 1 Gresik, 'Program Unggulan Madrasah Riset', *Man 1 Gresik*, 2023. Https://Man1gresik.Sch.Id/Madrasah-Riset/ (Accessed Dec. 20, 2025).

[14] M. Walid, N. Fitriah, And L. F. Pusposari, 'Penguatan Kultur Literasi Di Madrasah Berbasis Riset Melalui Optimalisasi Fungsi Perpustakaan Di Mts Negeri 1 Kota Batu', *J-Pai: Jurnal Pendidikan Agama Islam*, Vol. 6, No. 2, Pp. 101–110, 2020, Doi: 10.18860/Jpai.V6i2.8982.

[15] L. Zheng, K. K. Bhagat, Y. Zhen, And X. Zhang, 'The Effectiveness Of The Flipped Classroom On Students' Learning Achievement And Learning Motivation', *Educational Technology & Society*, Vol. 23, No. 1, Pp. 1–15, 2020.

[16] A. D. Safira, D. Fatimah, A. Zahra, F. Rahma, And F. Fauziah, 'Optimalisasi Keterampilan Literasi Digital Melalui Model Pembelajaran Flipped Classroom', *Atmosfer: Jurnal Pendidikan, Bahasa, Sastra, Seni, Budaya, Dan Sosial Humaniora*, Vol. 3, No. 2021, Pp. 131–140, 2025.

[17] A. R. Cindoswari, M. T. Syastra, M. Patli, And D. Putri, 'Peningkatan Kemampuan Literasi Media Pada Warga Belajar Pkbm Sumber Ilmu Di Kota Batam', *Jurnal Abdi Moestopo*, Vol. 03, Pp. 1–8, 2020.

[18] S. S. Eraku, M. K. Baruadi, And S. Anantadjaya, 'Digital Literacy And Educators Of Islamic Education', *Edukasi Islami: Jurnal Pendidikan Islam*, Vol. 10, No. 1, Pp. 569–576, 2021, Doi: 10.30868/Ei.V10i01.1533.

[19] J. F. Hair, W. C. Black, B. J. Babin, And R. E. Anderson, 'Multivariate Data Analysis . Andover', *Hampshire, United Kingdom: Cengage*, 2019.

[20] D. Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, Dan Tindakan*. 2013.

[21] T. Yamashita, 'Analyzing Likert Scale Surveys With Rasch Models', *Research Methods In Applied Linguistics*, Vol. 1, No. 3, P. 100022, 2022, Doi: Https://Doi.Org/10.1016/J.Rmal.2022.100022.

[22] S. Prion And K. A. Haerling, 'Making Sense Of Methods And Measurement: Pearson Product-Moment Correlation Coefficient', *Clinical Simulation In Nursing*, Vol. 10, No. 11, Pp. 587–588, 2014, Doi: 10.1016/J.Ecns.2014.07.010.

[23] C. P. Malkewitz, P. Schwall, C. Meesters, And J. Hardt, 'Estimating Reliability: A Comparison Of Cronbach's A, Mcdonald's Ωt And The Greatest Lower Bound', *Social Sciences & Humanities Open*, Vol. 7, No. 1, 2023, Doi: 10.1016/J.Ssaho.2022.100368.

[24] D. M. Nanang, 'Analysis Of Export Demand For Ghana's Timber Products: A Multivariate Co-Integration Approach', *Journal Of Forest Economics*, Vol. 16, No. 1, Pp. 47–61, 2010, Doi: 10.1016/J.Jfe.2009.06.001.

[25] D. Sugiyono, 'Metode Penelitian Kuantitatif Dan R&D', *Bandung: Alfabeta*, Pp. 26–33, 2010.

[26] B. Nugraha, *Pengembangan Uji Statistik: Implementasi Metode Regresi Linier Berganda Dengan Pertimbangan Uji Asumsi Klasik*. Pradina Pustaka, 2022.

ISSN: 1979-9438 (Print) / 2442-2355 (Online)
DOI: 10.35457/konstruk.v18i1.5510
Website: https://ejournal.unisbablitar.ac.id/index.php/konstruktivisme/index

[27] B. Maqsudah, 'Berdasi (Berdayakan Siswa): Inovasi Integrasi Siswa Dan Alumni Dalam Membangun Jaringan Penelitian Menuju Madrasah Berbasis Riset Yang Unggul Dan Mandiri', *Jira: Jurnal Inovasi Dan Riset Akademik*, Vol. 2, No. 1, Pp. 16–29, 2021.
[28] Fatimah, 'Pengaruh Model Pembelajaran Flipped Classroom Berbasis Youtube Terhadap Kemampuan Literasi Sains Peserta Didik', 2022.
[29] D. A. Sirakaya And S. Özdemir, 'The Effect Of A Flipped Classroom Model On Academic Achievement , Self-Directed Learning Readiness , Motivation And', *Malaysian Online Journal Of Educational Technology*, Vol. 6, No. 1, Pp. 76–91, 2018.
[30] N. Rahmatika, 'The Impact Of Flipped Learning On Students Critical Thinking: A Systematic Literature Review', *International Journal Of Learning, Teaching And Educational Research*, Vol. 23, No. 10, Pp. 180–206, 2024.
[31] C. B. Gama, H. Rahman, T. Luhuringbudi, And M. Masrom, 'Adoption Of Artificial Intelligence And Digital Resources Among Academicians Of Islamic Higher Education Institutions In Indonesia', *Join: Jurnal Online Informatika*, Vol. 10, No. 1, Pp. 42–52, 2025, Doi: 10.15575/Join.V10i1.1549.