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Digital Learning Management and Student Interest: Examining an Edpuzzle-Based Flipped Classroom in Fiqh Instruction

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ABSTRACT

This study aims to examine the effect of an Edpuzzle-based flipped classroom model on students' interest in learning Fiqh from a digital instructional management perspective. A quantitative approach with an experimental method was employed using a post-test-only control group design. The participants were divided into an experimental group, which received instruction through an Edpuzzle-supported flipped classroom model, and a control group, which was taught using conventional learning methods. Data were collected through a learning interest questionnaire, classroom observations, and documentation. Prior to hypothesis testing, prerequisite analyses were conducted, followed by an independent samples t-test using SPSS to determine the significance of the treatment effect. The findings reveal a statistically significant difference in students' learning interest between the experimental and control groups, with a significance value lower than 0.05. These results indicate that the integration of flipped classroom strategies with digital media such as Edpuzzle effectively enhances students' interest in Fiqh learning. The study implies that well-managed digital learning environments and instructional planning play a crucial role in fostering student engagement and motivation. Therefore, the Edpuzzle-based flipped classroom model can be considered an effective instructional management strategy to improve learning interest in religious education contexts.

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INTRODUCTION

Learning is essentially an interactive process between learners and their environment that leads to behavioral change in cognitive, affective, and psychomotor domains. In the context of formal education, effective learning is not merely the transmission of knowledge but a managed instructional process that enables students to actively acquire, process, and apply knowledge, skills,

and attitudes (Mulyasa, 2004). In contemporary society, education plays a crucial role in shaping not only intellectual capacity but also moral and spiritual character, particularly in religious education. The management of learning processes becomes increasingly important as schools are expected to respond to rapid social and technological changes. Evidence from educational practice shows that poorly managed instruction often results in passive learning, low motivation, and limited student engagement (Hasanah et al., 2024; Sanjani & Fahmi, 2023). Conversely, well-organized instructional management fosters meaningful interaction and sustained learning interest. Therefore, research focusing on effective instructional management models is essential, as it contributes to improving learning quality and supports broader societal goals related to character building, moral education, and lifelong learning readiness.

One of the major challenges in education today is the persistence of teacher-centered instructional practices that limit students' active participation and learning interest. In many educational contexts, learning management remains focused on content delivery rather than on managing learning experiences that accommodate students' needs, learning styles, and technological literacy (Ataman & Safitri, 2024). This issue is particularly evident in religious education, where instructional practices often emphasize memorization rather than understanding, reflection, and practical application. As a result, students may perceive religious subjects as abstract, monotonous, or disconnected from daily life (Bahja et al., 2025). From a management perspective, ineffective instructional planning, limited use of digital learning tools, and insufficient classroom engagement strategies contribute to low learning interest. Studies in educational management indicate that student motivation and interest are strongly influenced by how learning activities are structured, facilitated, and evaluated (Abas & Kholidah, 2025). Therefore, addressing this general problem requires innovative learning models that integrate pedagogical strategies with effective instructional management to enhance student engagement and learning interest.

Empirical evidence from preliminary observations, interviews, and questionnaire distribution indicates that students' interest in learning Fiqh remains relatively low. This phenomenon is characterized by limited classroom participation, low enthusiasm during lessons, and minimal engagement with learning materials. From an instructional management standpoint, these conditions are often associated with the dominance of conventional teaching methods, minimal variation in learning models, and underutilization of digital learning media. Such practices reduce opportunities for interactive learning and student-centered activities. Data from the learning interest questionnaire reveal that aspects such as acceptance, involvement, enjoyment, and curiosity are unevenly developed, with acceptance showing the lowest score. This suggests that students may lack readiness and openness toward Fiqh learning due to

instructional approaches that do not sufficiently engage them. These field phenomena highlight the need for a more strategic management of learning processes that emphasizes student autonomy, active participation, and meaningful interaction through innovative instructional models.

Previous studies have emphasized that effective learning occurs when instructional management supports active student engagement and meaningful learning experiences. Research on religious education demonstrates that students' learning outcomes and attitudes are closely related to the instructional strategies employed by teachers. Nasbia (2022) argues that mastery of Fiqh learning significantly influences students' religious practices, particularly in daily worship activities, as knowledge and belief form the foundation for action. However, many studies focus primarily on cognitive outcomes, with limited attention to affective aspects such as learning interest. Additionally, existing research often examines flipped classroom models or digital media separately, without integrating them into a comprehensive instructional management framework. This gap indicates a lack of studies that explore how digital learning management strategies can systematically enhance students' interest in religious subjects, particularly Fiqh, through structured instructional design and media integration.

The flipped classroom model has been widely recognized as an innovative instructional approach that promotes student-centered learning by shifting content delivery outside the classroom and using class time for interactive activities. Studies suggest that this model improves engagement, autonomy, and critical thinking when supported by appropriate digital tools. Meanwhile, digital platforms such as Edpuzzle enable teachers to manage learning content effectively by embedding questions, feedback, and monitoring features into instructional videos. Despite these advantages, few studies have positioned flipped classroom implementation within the broader context of instructional and digital learning management in religious education. Most existing research focuses on general subjects or technology adoption outcomes. Therefore, this study positions itself at the intersection of instructional management, digital learning management, and religious education by examining how an Edpuzzle-based flipped classroom model can enhance students' learning interest in Fiqh. This positioning allows the study to contribute both theoretically and practically to educational management literature.

The novelty of this study lies in its integration of flipped classroom pedagogy with digital learning management using Edpuzzle, specifically within the context of Fiqh education. Unlike previous studies that examine learning outcomes or technology use in isolation, this research emphasizes the management dimension of instructional design, implementation, and student engagement. By focusing on learning interest as a key affective outcome, the study addresses an underexplored area in religious education research.

Furthermore, the use of Edpuzzle as a structured management tool enables systematic monitoring of students' learning activities outside the classroom, thereby strengthening instructional control and feedback mechanisms. This state-of-the-art approach highlights the importance of managing learning environments holistically, combining pedagogy, technology, and student engagement strategies to address persistent issues of low motivation and interest in religious learning.

Based on the identified problems and research gaps, this study seeks to examine whether the implementation of an Edpuzzle-based flipped classroom model significantly influences students' interest in learning Fiqh. The main argument of this research is that effective instructional management, supported by digital learning tools, can enhance student engagement, acceptance, and enjoyment in learning. The study hypothesizes that students taught through a flipped classroom model integrated with Edpuzzle will demonstrate higher learning interest than those taught through conventional methods. The findings are expected to contribute theoretically by enriching the discourse on instructional and digital learning management in religious education. Practically, the study provides empirical evidence and instructional insights for educators and school administrators in designing innovative, student-centered learning environments that foster interest and motivation in Fiqh learning.

RESEARCH METHOD

This study employed an experimental research design with a quantitative approach. Experimental research is a method used to examine the causal effect of a treatment on a dependent variable under controlled conditions. According to Borg and Gall, experimental research is considered the most scientifically valid approach because it allows strict control over extraneous variables that may influence the outcome of the experiment (Rahayu et al., 2024).

The specific design used in this study was a post-test only control group design, which involves two groups: an experimental group and a control group. In this design, the experimental group receives the treatment, while the control group does not. After the intervention, the outcomes of both groups are measured and compared to assess the effect of the treatment (Sugiyono, 2020). The schematic of the design is presented below:

Table 1. Post-Test Only Control Group Design Structure

Class	Randomization	Treatment (X)	Post-Test (O)
A	R	X	O
C	R	-	O

Legend:
Class A: Experimental group receiving the Flipped Classroom treatment
Class C: Control group receiving conventional instruction (Direct Instruction)
X: Treatment (Edpuzzle-based Flipped Classroom)
O: Post-test measurement

The population of this study consisted of all eighth-grade students at MTs Darul Huda, totaling 100 students distributed across four classes, each comprising 25 students. The sample was selected using purposive sampling, considering that all classes were homogeneous. Homogeneity was determined based on the following criteria: students receive the same curriculum, are in the same grade level, and no class is designated as advanced or special, ensuring comparable academic ability among students.

Tabel 2. Variables and Operational Definitions

Variable	Operational Definition	Measurement Tool	Measurement Result	Scale
Independent Variable (X): Flipped Classroom	The Flipped Classroom is a student-centered instructional model in which learning materials are provided before class so that students can understand basic concepts independently. Class time is then used for discussion, question-and-answer sessions, and clarification of concepts not yet understood (Farhan et al., 2023).	Observation	–	–
Dependent Variable (Y): Learning Interest	Learning interest refers to the factors that motivate students to seek knowledge, derived from curiosity, enjoyment, and desire to acquire understanding. Learning interest is part of motivation that arises from student involvement and active participation in the learning process (Jasmine, 2016).	Questionnaire	Learning interest scores	Interval

Data Collection Techniques

The questionnaire was used to measure students' learning interest after the intervention. It consisted of written questions submitted to respondents, who answered in writing (Yulianti et al., 2024). Observation was conducted to monitor students' engagement, participation, and interaction during the Edpuzzle-based Flipped Classroom. Documentation collected information about the school's history, organizational structure, teacher profiles, student data, and baseline learning interest.

Edpuzzle-Based Flipped Classroom Intervention

The intervention included six stages: preparing and distributing interactive learning videos, guiding independent study at home, facilitating classroom discussions and group work, providing direct feedback, conducting short quizzes for formative assessment, and offering additional support to students who needed it. This ensured active, student-centered learning and allowed teachers to monitor and manage the learning process effectively (Ananda & Hayati, 2020).

Data Management and Analysis

Data management involved editing, coding, data entry, and cleaning. Editing checked and corrected incomplete or inconsistent responses. Coding transformed responses into numerical values. Data entry involved inputting coded responses into SPSS version 16, followed by data cleaning to check for errors or missing values.

Data analysis used both descriptive and inferential statistics. Descriptive statistics summarized the data, while inferential statistics examined the effect of the Flipped Classroom on students' learning interest. Prerequisite tests for normality and homogeneity were conducted to ensure assumptions were met. An independent samples t-test was applied to compare post-test scores between the experimental and control groups, evaluating the effectiveness of the Edpuzzle-based Flipped Classroom in enhancing students' learning interest in Fiqih.

RESULT AND DISCUSSION

Instrument Testing

Validity

The validity of the research instrument was first examined to ensure that it accurately measured the intended constructs. According to Sugiharto and Sitinjak (Sanaky, 2021), validity testing evaluates the degree to which an instrument truly measures what it purports to measure. In this study, the validity of the questionnaire items was tested using product-moment correlation in SPSS, confirming that all items were valid and suitable for measuring students' learning interest in Fiqh.

Reliability

Reliability testing was conducted to determine the consistency of the instrument. A reliable instrument produces stable and reproducible results (Azizah & Chalimatusadiah, 2025). The Cronbach's Alpha coefficient was calculated for all questionnaire items, resulting in α = 0.670 across 12 items, indicating acceptable internal consistency.

Table 3. Reliability Test Results

Cronbach's Alpha	N of Items
0.670	12

Prerequisite Tests

Before analyzing the main data, prerequisite tests were conducted to check the normality and homogeneity of the data, which are essential assumptions for parametric testing.

Normality Test

Normality testing assessed whether the post-test data were drawn from a normally distributed population (Sonjaya et al., 2025). The Shapiro-Wilk test indicated that Group 1 (experimental) was normally distributed ($p = 0.718$), while Group 2 (control) showed a slightly non-normal distribution ($p = 0.027$), suggesting that the Mann-Whitney test might be appropriate for inferential analysis in addition to parametric testing.

Table 4. Normality Test Results

Group	Kolmogorov-Smirnov Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
1	0.125	25	0.200*	0.973	25	0.718
2	0.163	23	0.116	0.902	23	0.027

Homogeneity Test

The Levene test confirmed that the variance between the experimental and control groups was homogeneous ($p > 0.05$), indicating that both groups were comparable in terms of post-test score variability.

Table 5. Homogeneity Test Results

Result	Method	Levene Statistic	df1	df2	Sig.
	Based on Mean	0.003	1	46	0.956
	Based on Median	0.004	1	46	0.950
	Based on Median (adj df)	0.004	1	40.558	0.950
	Based on Trimmed Mean	0.011	1	46	0.918

Mann-Whitney Test

Since one group deviated from normality, the Mann-Whitney U test was also conducted to confirm differences between groups. The results indicated a significant difference ($p = 0.017$) between the experimental and control groups, supporting the effect of the treatment.

Table 6. Mann-Whitney Test Results

Statistic	Value
Mann-Whitney U	172.500
Wilcoxon W	497.500
Z	-2.380
Asymp. Sig. (2-tailed)	0.017

Descriptive Statistics

Post-test scores were analyzed to examine the level of learning interest among students. The experimental group exhibited a higher mean score (M = 38.72) compared to the control group (M = 29.84), suggesting that the Edpuzzle-based Flipped Classroom model positively affected students' learning interest.

Table 7. Post-Test Results

Class	N	Range	Min	Max	Mean	Std Deviation	Variance
Experiment	25	15	30	45	38.72	4.21	17.72
Control	25	14	22	36	29.84	3.89	15.13
Valid N (Listwise)	50	–	–	–	–	–	–

Learning Interest Categories

To provide further insight, learning interest scores were categorized into high, medium, and low. The experimental group showed a higher proportion of students in the high category, while the control group had more students in the medium and low categories.

Table 8. Learning Interest Categories

Category	Score Range	∑	Percentage
High	X ≥ 34	4	16%
Medium	26–33	13	52%
Low	X ≤ 25	8	32%
Total	–	25	100%

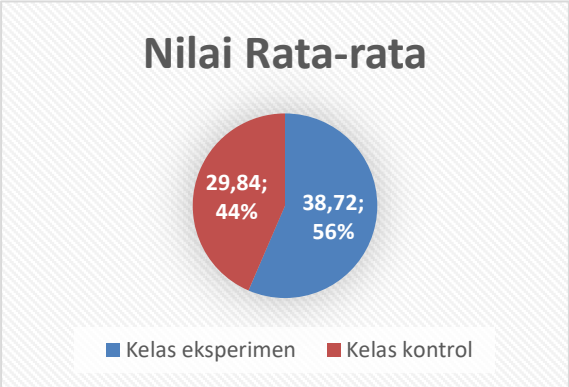

Figure 6. Learning Interest Diagram

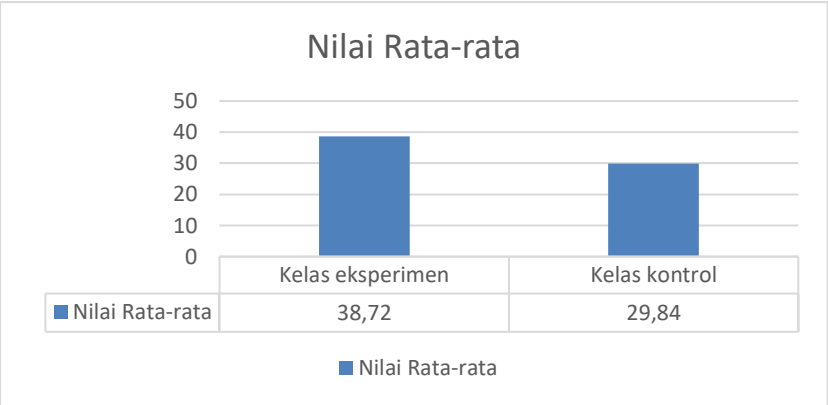

Figure 7. Comparison of Experimental and Control Groups

Inferential Statistics – T-Test

An independent samples t-test was conducted to assess the statistical significance of the observed differences in learning interest between the experimental and control groups. The correlation between the intervention and learning interest was also examined.

Table 9. Independent Samples T-Test Results

Group	Mean	N	Std Deviation	Std Error Mean
Experiment	38.72	25	4.21	3.029
Control	29.84	25	3.89	4.070

Table 10. Correlation Between X & Y

Pair	N	Correlation	Sig.
X & Y	50	0.58	0.001

The t-test results indicate that Sig. = 0.001 < α = 0.05, confirming that the Edpuzzle-based Flipped Classroom model had a statistically significant effect on students' learning interest in Fiqh. The correlation coefficient (r = 0.58) indicates a moderate positive relationship between the treatment and learning interest.

Summary of Findings

Overall, the results show that the research instrument was valid and reliable for measuring students' learning interest. The data met the necessary assumptions, with minor adjustments made using non-parametric testing where required. Students in the experimental group demonstrated higher scores in both the mean and category analysis compared to the control group. Statistical analysis further confirmed a significant positive effect of the intervention, providing strong evidence that the Edpuzzle-based Flipped Classroom model effectively enhances learning interest in Fiqh among students.

DISCUSSION

The findings of this study provide strong empirical evidence that the Edpuzzle-based flipped classroom model significantly enhances students' interest in learning Fiqh. This result reinforces the theoretical assumption that student-centered instructional models promote deeper engagement by shifting learners from passive recipients to active participants in the learning process. In line with meta-analytic findings by Vitta and Al-Hoorie (2023), flipped classroom approaches consistently demonstrate positive effects on affective learning outcomes, particularly motivation and learning interest. The increased interest observed in this study can be attributed to the structured pre-class exposure to learning materials, which reduces cognitive overload during face-to-face sessions and allows students to arrive in class with prior conceptual understanding. Consequently, classroom interactions become more meaningful, interactive, and dialogic, which fosters sustained attention and intrinsic interest. This finding supports Baig and Yadegaridehkordi's (2023) argument that flipped learning environments are most effective when they systematically integrate pre-class preparation with in-class collaborative activities.

Beyond pedagogical innovation, the effectiveness of the Edpuzzle-based flipped classroom in this study highlights the critical role of digital instructional management in shaping learning interest. The use of Edpuzzle enabled structured monitoring of student engagement through embedded questions and learning analytics, allowing teachers to manage the learning process more effectively. This aligns with Alserhan et al. (2023), who emphasize that digital learning environments enhance students' self-regulation when supported by systematic instructional design and monitoring. The ability to track video completion rates and student responses not only strengthens formative assessment but also encourages accountability among learners. Furthermore, Esawe et al. (2023) argue that acceptance and effective use of learning management systems significantly influence students' learning behaviors, particularly in technology-mediated contexts. In this study, the managed integration of Edpuzzle functioned as a digital control mechanism, reinforcing structured learning routines and positively influencing students' learning interest.

From an educational management perspective, the findings suggest that the flipped classroom model contributes to effective instructional leadership and classroom management. Teachers are no longer limited to delivering content but assume the role of learning facilitators who plan, organize, supervise, and evaluate instructional activities. This aligns with Shaked's (2023) assertion that organizational management plays a pivotal role in supporting instructional leadership by creating conditions that foster active learning. Moreover, Villan

and Quines (2025) highlight that instructional management directly influences school effectiveness through improved learning climates and student engagement. In this study, the flipped classroom structure enabled more efficient use of classroom time for higher-order learning activities, discussion, and feedback, demonstrating how instructional management practices can directly shape students' affective learning outcomes, particularly interest and engagement.

The increased learning interest identified in this research is also consistent with prior studies emphasizing the influence of interactive digital media on students' motivation. Febrina and Setiawan (2024) found that the use of engaging learning media significantly enhances students' interest across different subject domains, while Firmansyah (2023) demonstrated that Edpuzzle-assisted learning promotes higher engagement and critical thinking. These findings suggest that learning interest is not solely determined by instructional models but also by how learning media are designed and managed. In this study, the combination of flipped classroom pedagogy with interactive video media created a learning environment that stimulated curiosity, sustained attention, and active participation. This supports the argument that effective educational management requires not only innovative pedagogy but also the strategic selection and utilization of digital learning tools.

Overall, this study contributes to the growing body of literature by demonstrating that the success of flipped classroom implementation is closely linked to effective digital instructional management. While previous studies have focused primarily on cognitive outcomes, this research highlights learning interest as a critical affective dimension influenced by well-managed instructional strategies. The findings suggest that integrating flipped learning with digital platforms such as Edpuzzle can serve as a practical management strategy for enhancing student engagement. However, the effectiveness of this approach depends on systematic planning, continuous monitoring, and responsive instructional leadership. Therefore, this study extends existing research by positioning the flipped classroom not merely as a pedagogical innovation but as an integrated instructional management approach capable of improving affective learning outcomes in educational settings.

CONCLUSION

This study concludes that the Edpuzzle-based flipped classroom model has a significant positive effect on students' interest in learning Fiqh. The implementation of this instructional model encourages active student participation, increases engagement, and fosters a more enjoyable learning atmosphere by shifting learning responsibility toward students. Through

structured pre-class learning and interactive in-class activities, students demonstrate higher levels of attention, involvement, and positive attitudes toward learning. These findings confirm that integrating digital media with student-centered instructional strategies can effectively enhance affective learning outcomes, particularly learning interest.

Furthermore, the results highlight the importance of effective instructional management in the successful implementation of technology-integrated learning models. The systematic planning, organization, monitoring, and evaluation of learning activities through digital platforms such as Edpuzzle enable teachers to optimize classroom interactions and support students' learning needs. From an educational management perspective, the flipped classroom serves not only as a pedagogical innovation but also as a strategic instructional management approach that contributes to improved learning engagement. Therefore, this study provides empirical support for the adoption of digitally supported flipped classroom models as an effective alternative to enhance students' learning interest in religious education contexts.

REFERENCES

Abas, M. C., & Kholidah, N. D. (2025). Improving Brand Awareness of Educational Institutions Through Educational Personnel Recruitment Management in Madrasah. *At-Tarbiyat*, *8*(2025).

Alserhan, S., Alqahtani, T. M., Yahaya, N., Al-Rahmi, W. M., & Abuhassna, H. (2023). Personal learning environments: Modeling students' self-regulation enhancement through a learning management system platform. *IEEE Access*, *11*, 5464–5482. https://doi.org/10.1109/ACCESS.2023.3236504

Ananda, R., & Hayati, F. (2020). *Variabel belajar (kompilasi konsep)*. Pusdikra MJ.

Ananda, R., & Hayati, F. (2020). *Variabel belajar (kompilasi konsep)*. Pusdikra MJ.

Ataman, A., & Safitri, S. D. (2024). Exploring complementary leadership styles in madrasahs by aiming at their impact on integrity and character development. *Business and Applied Management Journal*, *1*(2), 118–133. https://doi.org/10.61987/bamj.v1i2.487

Azizah, N., & Chalimatusadiah, C. (2025). Uji Validitas dan Uji Reliabilitas Instrumen Penelitian Pemahaman Konsep Dasar Aljabar. 9. *Jurnal Pendidikan Tambusai*, *9*(1), 6637–6643.

Azizah, N., & Chalimatusadiah, C. (2025). Uji Validitas dan Uji Reliabilitas Instrumen Penelitian Pemahaman Konsep Dasar Aljabar. 9. *Jurnal Pendidikan Tambusai*, *9*(1), 6637–6643.

Bahja, A. W. T., Hakim, L., & Af'idah, R. A. (2025). Literature review: Analisis model pembelajaran efektif dalam implementasi Kurikulum Merdeka di sekolah. *Konstruktivisme: Jurnal Pendidikan Dan Pembelajaran*, *17*(1), 11–27. https://doi.org/10.35457/konstruk.v17i1.3651

Baig, M. I., & Yadegaridehkordi, E. (2023). Flipped classroom in higher education: a systematic literature review and research challenges. *International Journal of Educational Technology in Higher Education*, *20*(1), 61. https://doi.org/10.1186/s41239-023-00430-5

Cantica, O., Abdillah, M. H., & Anggraini, F. (2023). Analisis Produksi Padi di Provinsi Jambi dan Riau Menggunakan Uji Mann-Whitney. *Multi Proximity: Jurnal Statistika*, *2*(1), 32–38.

Esawe, A. T., Esawe, K. T., & Esawe, N. T. (2023). Acceptance of the learning management system in the time of COVID-19 pandemic: An application and extension of the unified theory of acceptance and use of technology model. *E-Learning and Digital Media*, *20*(2), 162–190.

Farhan, M., Malik, A., & Chusni, M. M. (2023). *Model flipped classroom dalam pembelajaran fisika [sumber elektronis]*.

Febrina, V., & Setiawan, D. (2024). Analysis of the use of learning media on the learning interest of learning science students and environmental themes. *Jurnal Penelitian Pendidikan IPA*, *10*(8), 5702–5709. https://doi.org/10.29303/jppipa.v10i8.7497

Firmansyah, A. F. (2023). Developing Edpuzzle-assisted e-Worksheet to Enhance Students' Critical Thinking Skills in Problem-based Learning. *International Journal on Emerging Mathematics Education (IJEME)*, *7*(2). https://doi.org/10.12928/ijeme.v7i2.29569

Hasanah, U., Fauzi, M. N., & Abrori, M. (2024). The role of school environment in maintaining the consistency of hijab wearing in students: Social challenges and solutions for religious education in the modern era. *Journal of Social Studies and Education*, *1*(2), 100–112. https://doi.org/10.61987/jsse.v1i2.392

Jasmine, K. (2016). *Penambahan natrium benzoat dan kalium sorbat (antiinversi) dan kecepatan pengadukan sebagai upaya penghambatan reaksi inversi pada nira tebu*. Universitas Brawijaya.

Mulyasa, E. (2004). Kurikulum berbasis kompetensi. Bandung: PT. Remaja Rosdakarya. Notoatmodjo., 2010. *Metodologi Penelitian Kesehatan*.

Nasbia, N. (2022). *Implementasi pembelajaran fiqih di MTs Al-Wasilah Lemo kab. Polman dala mewujudkan Pengamalan Ibadah*. IAIN Parepare.

NOVISULISTINA, R., Prihati, J., & Hariyadi, S. (2025). The Effect of the Problem-Based Learning Model with Edpuzzle Media on the Material of Plant Body Parts on Critical Thinking Skills and Learning Outcomes of Elementary School Students. *BIOEDUKASI: Jurnal Biologi Dan Pembelajarannya*, *23*(3), 478–484.

Rahayu, M. S., Siroj, R. A., & Afgani, M. W. (2024). Experimental Research Dalam Penelitian Pendidikan. *Jurnal Ilmiah Wahana Pendidikan*, *10*(18), 901–911.

Sanaky, M. M. (2021). Analisis faktor-faktor keterlambatan pada proyek pembangunan gedung asrama MAN 1 Tulehu Maluku Tengah. *Jurnal Simetrik*, *11*(1), 432–439. https://doi.org/10.31959/js.v11i1.615

Sanjani, M., & Fahmi, A. (2023). *Implementasi sistem informasi manajemen pendidikan dalam mewujudkan Madrasah Unggulan di MTsN 3 Banyuwangi*. Universitas Islam Negeri Maulana Malik Ibrahim.

Shaked, H. (2023). How organizational management supports instructional leadership. *Journal of Educational Administration*, *61*(1), 60–77. https://doi.org/10.1108/JEA-07-2022-0101

Sianturi, R. (2022). Uji homogenitas sebagai syarat pengujian analisis. *Jurnal Pendidikan, Sains Sosial, Dan Agama*, *8*(1), 386–397. https://doi.org/10.53565/pssa.v8i1.507

Sonjaya, R. P., Aliyya, F. R., Naufal, S., & Nursalman, M. (2025). Pengujian Prasyarat Analisis Data Nilai Kelas: Uji Normalitas dan Uji Homogenitas. *Jurnal Pendidikan Tambusai*, *9*(1), 1627–1639.

Sonjaya, R. P., Aliyya, F. R., Naufal, S., & Nursalman, M. (2025). Pengujian Prasyarat Analisis Data Nilai Kelas: Uji Normalitas dan Uji Homogenitas. *Jurnal Pendidikan Tambusai*, *9*(1), 1627–1639.

Sugiyono. (2020). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, R & D*. Alfabeta.

Villan, M. G., & Quines, L. A. (2025). School Climate, Principal Instructional Management, Organizational Citizenship Behavior. A Structural Equation Model On School Effectiveness In Public Schools. *European Journal of Education Studies*, *12*(2). https://doi.org/10.46827/ejes.v12i2.5853

Vitta, J. P., & Al-Hoorie, A. H. (2023). The flipped classroom in second language learning: A meta-analysis. *Language Teaching Research*, *27*(5), 1268–1292. https://doi.org/10.1177/1362168820981403

Wu, R., & Yu, Z. (2024). Do AI chatbots improve students learning outcomes? Evidence from a meta-analysis. *British Journal of Educational Technology*, *55*(1), 10–33. https://doi.org/10.1111/bjet.13334

Yam, J. H., & Taufik, R. (2021). Hipotesis penelitian kuantitatif. *Perspektif: Jurnal Ilmu Administrasi*, *3*(2), 96–102. https://doi.org/10.33592/perspektif.v3i2.1540

Yulianti, R., Syukrilla, W. A., Effendi, E., Febriyanti, T. L., Rahayu, D. S., Agung, B. H., Oktarianto, M. L., Koto, S. K., Rahmawan, S., & Asmara, A. (2024). Metode Penelitian Eksperimen: Konsep, Implementasi, dan Studi Kasus. *Penerbit Mifandi Mandiri Digital*, *1*(01).