



Joyful Learning with Gamification: Development of Indonesian Language Learning Media in MI

Pembelajaran yang Menyenangkan dengan Gamifikasi: Pengembangan Media Pembelajaran Bahasa Indonesia di MI

Dewi Niswatul Fithriyah^{1*)}, Suttriso²⁾, Zumrotus Sa'diyah³⁾, Saskia Agustina⁴⁾,
 Made Krisnanda⁵⁾

1) 2) 3) 4) Teacher Education Madrasah Ibtidaiyah, Tarbiyah, UNUGIRI, Indonesia

5) The University of Newcastle, Australia

Abstract

Education in the 4.0 era demands learning media that are enjoyable, interactive, and capable of increasing student motivation at the elementary school level. Preliminary findings at MI Nurul Huda Temayang revealed that Indonesian language learning, particularly capitalization material, is still monotonous and teacher-centered, resulting in low student engagement. This study aims to develop a gamification-based learning media integrating Google Sites, Canva, and Wordwall to enhance students' motivation, engagement, and comprehension. This study employed a Research and Development (R&D) method using the ADDIE model involving 30 third-grade students. Data were collected through observation, interviews, motivation questionnaires, and learning outcome tests. The results showed that students became more active, motivated, and demonstrated better conceptual understanding. The developed gamification-based learning media proved to be feasible and effective in creating enjoyable and meaningful Indonesian language learning in elementary schools.

Keywords: ADDIE, Gamification, Learning Media, Understanding.

Abstrak

Pembelajaran di era 4.0 menuntut adanya media yang menyenangkan, interaktif, dan mampu meningkatkan motivasi belajar siswa sekolah dasar. Berdasarkan temuan awal di MI Nurul Huda Temayang, pembelajaran Bahasa Indonesia khususnya materi penggunaan huruf kapital masih bersifat monoton dan teacher centered sehingga berdampak pada rendahnya keterlibatan siswa dalam proses belajar. Penelitian ini bertujuan mengembangkan media pembelajaran berbasis gamifikasi yang mengintegrasikan Google Sites, Canva, dan Wordwall untuk meningkatkan motivasi, keterlibatan, dan pemahaman siswa. Penelitian menggunakan metode Research and Development (R&D) dengan model ADDIE yang meliputi tahapan analisis, desain, pengembangan, implementasi, dan evaluasi dengan subjek 30 siswa kelas III. Instrumen penelitian meliputi observasi, wawancara, angket motivasi, dan tes hasil belajar. Hasil implementasi menunjukkan bahwa siswa lebih aktif, antusias, dan memiliki pemahaman konsep yang lebih baik. Media gamifikasi terbukti mampu menciptakan pembelajaran yang menyenangkan, interaktif, dan efektif sehingga layak digunakan dalam pembelajaran Bahasa Indonesia di sekolah dasar.

Keywords: Gamifikasi, Media Pembelajaran, Bahasa Indonesia, Motivasi, ADDIE.

Received (27 Nov), Revised (02 Dec), Accepted (29 Dec)

How to Cite: Fithriyah, D. N., Suttriso, Sa'diyah, Z., Agustina, S., & Krisnanda, M. (2025). Joyful Learning with Gamification: Development of Indonesian Language Learning Media in MI. *JEER: Journal of Elementary Educational Research*, 5(2), 275-290.

*Corresponding author:

E-mail: dewinawatul@unugiri.ac.id

INTRODUCTION

Education is one of the main factors in preparing a quality future generation (Muthoharoh, 2024). In the context of basic education, the main goal is to form a foundation of knowledge and skills that will be the foundation for further learning (Febrianti, 2024). However, in the 4.0 era, the challenges in the world of education are increasingly complex, especially in terms of creating learning that is *Joyful* and effective for students in primary schools (Abrori et al., 2025). The majority of students feel bored with conventional learning approaches that tend to be monotonous. Teachers tend to apply learning-based learning *teacher centered* without being integrated with methods that are attractive and enable students (Nafi'a et al., 2022). The way of learning by delivering material only with lectures and written assignments, without any variation, is less able to attract students' attention (Fithriyah et al., 2023). This leads to a decrease in student motivation and involvement in the learning process.

On the other hand, rapid advances in digital technology and information systems have profoundly changed the paradigm of education (Fithriyah et al., 2024). With the integration of information and communication technology (ICT) that is increasingly developing, the learning process is now not limited to traditional methods. Instead, it has evolved into a more interactive, flexible, and platform-based system that allows for wider accessibility, both in online and hybrid learning (Yulia & Fithriyah, 2023). This development encourages the creation of a more adaptive learning environment and personalization of learning according to the needs and individual learning styles of students (Dinda Amelia et al., 2024).

In addition, this progress opens up significant opportunities to improve the quality of education, especially in terms of delivering more innovative and interactive materials (Ulimaz et al., 2024). One of the approaches that is currently receiving wide attention in the realm of education is *joyful learning* that can be achieved with gamification-based learning (Maknun & Niswar, 2025). This learning concept is varied with games that are integrated in the learning process. The concept of gamification is seen as able to increase students' intrinsic motivation by creating a learning experience that is not only fun, but also competitive and challenging (Srihartati & Nisa, 2023). By utilizing gamification-based learning media, it is hoped that students can be actively involved in learning, as well as gain experiences that connect fun with mastery of subject matter more deeply.

MI Nurul Huda Temayang, as one of the basic education institutions, faces similar challenges in improving the quality of learning. The limitations of the learning media used at MI Nurul Huda Temayang are one of the *urgent* problems that can affect the quality of education. Some of the factors that are obstacles include limited facilities and infrastructure, limited teacher human resources in developing varied learning materials, and lack of skills in utilizing technology in learning activities. In some classrooms, even though there are already digital devices such as projectors, their use is still limited and has not been maximized to improve the interaction between students and learning materials. This causes the teaching and learning process to tend to be less interesting and does not meet the needs of students who are increasingly accustomed to an environment full of technology.

The development of gamification-based learning media at MI Nurul Huda Temayang is an urgent need to overcome these challenges. Especially in the material on the use of capital letters in Indonesian subjects. Gamification learning media can present material more *engaging*, interactive, and full of challenges, which can motivate students to be more actively involved in the learning process (Gazali et al., 2025). By integrating game elements such as points, badges, challenges, and *leaderboard*, students can feel more motivated to master the material about capital letters and achieve learning objectives to the fullest (Shelvia Amanda et al., 2024). In addition, gamification also allows for the provision of live feedback, which allows students to monitor their progress in a systematic manner *real-time* (Alriad, et al). This certainly has a positive impact on improving their understanding and learning outcomes related to this material (Ulimaz et al., 2024). Through an approach that is more fun and relevant to the times, it is hoped that students can more easily understand and apply the use of capital letters in Indonesian in a more effective and interesting way (Janković et al., 2023; Jovanović, 2022; Maryo & Pujiastuti, 2022).

Several previous studies have shown that gamification can increase student motivation and engagement in learning, particularly at the elementary school level. Previous research mostly focused on the development of digital learning media to improve cognitive achievement, students' activeness, or learning interest without specifically integrating a structured gamification framework into Indonesian language learning. Moreover, most existing research places gamification as an additional feature, not as the main learning approach, and is rarely applied to capitalization material in

Indonesian learning at the Madrasah Ibtidaiyah level. In addition, many studies emphasize learning outcomes, while only a few explore how gamification shapes enjoyable learning experiences, learning engagement, and student involvement in the learning process.

Based on these conditions, there is a clear research gap where Indonesian learning media requires an innovation that not only delivers material but also builds a joyful learning atmosphere, encourages participation, and supports students' motivation. This study fills that gap by developing a structured gamification-based learning media integrating Google Sites, Canva, and Wordwall, specifically designed for Indonesian language learning in MI. The novelty of this research lies in the integration of gamification elements into instructional design to create joyful, interactive, and meaningful learning experiences for students.

The purpose of this research is to develop gamification-based interactive learning media that can be applied at MI Nurul Huda Temayang to increase student involvement and motivation in learning. With this media, it is hoped that students can learn in a more fun and effective way, as well as gain a better understanding of the subject matter. This research also aims to explore the potential and challenges faced in the implementation of gamification in elementary schools, as well as provide recommendations for the development of similar media in other schools that may face similar problems.

Through the development of gamification-based learning media, this research is expected to provide practical solutions that can be implemented to improve the quality of education at the elementary school level, especially at MI Nurul Huda Temayang. It is also hoped that the results of this research can be a reference for educators and education managers in creating a more fun, interesting, and positive learning experience to improve student learning achievement.

METHOD

This research used a research and development method with the ADDIE (Analysis, Design, Development, Implementation, Evaluation) approach. The ADDIE model was chosen because it provides a clear and systematic structure in designing and developing gamification-based learning media that is relevant to students' needs (Dewi Niswatul Fithriyah et al., 2022). The development process follows five main stages, namely analysis, design, development, implementation, and evaluation (Suttriso, 2025).



Figure 1. ADDIE

The subject of this research is a third grade student of MI Nurul Huda Temayang who was selected using purposive sampling, where the selection of subjects is based on the fact that at this stage students begin to learn the basic concepts of writing in more depth. The sample consisted of 30 students who were in the experimental group in this study.

Data collection instruments include observation, *deep interviews*, questionnaires, and learning outcome tests. Observations were made during the learning process to assess the level of student involvement and their response to the gamification media applied. Deep interviews were conducted with several teachers and students to obtain data related to the use of gamification-based learning media. Questionnaires are used to measure changes in students' motivation and attitudes toward learning. The learning outcome test is used to measure students' understanding of the material using capital letters before and after the use of media.

RESULTS AND DISCUSSION

This research has developed a gamification-based learning media for the use of capital letters in Indonesian subjects for third grade students of MI Nurul Huda Temayang. This learning medium integrates gamification elements such as points, badges, challenges, and leaderboards to increase student motivation, engagement, and understanding (Wardhani et al., 2024).

The module development process follows five stages in the ADDIE model: Analysis, Design, Development, Implementation, and Evaluation.

Analysis Stage

At the analysis stage, the researcher identified problems in learning the use of capital letters at MI Nurul Huda Temayang. Learning that tends to be monotonous and teacher-centered and also the limitations of interesting and interactive learning media are the main challenges. The results of the analysis stage can be seen in the Table 1.

Table 1. Preliminary Study Analysis Results

Aspects	Description
Learning Problems	Learning to use capital letters at MI Nurul Huda Temayang tends to be monotonous and <i>teacher-centered</i> .
Limitations of Learning Media	The learning media used is not interesting and interactive enough, hindering student involvement so that it is not <i>joyful Learning</i> (Wahyuni & Naim, 2019).
Interactive Media Needs	Learning media that is more interesting, interactive, and can increase student engagement and motivation is needed (Ihsan & Pahmi, 2022).
Use of Technology	The technology used in learning is still limited. Technology integration is needed to support more engaging and effective learning.
Solutions Implemented	Development of gamification-based learning media that integrates Canva, <i>Google Site</i> , and <i>Wordwall</i> to increase student engagement and motivation.

The analysis presented in this discussion is based on data obtained from multiple instruments to ensure the validity of the findings. The conclusions regarding students' motivation and engagement are supported by classroom observations and student questionnaires, while findings related to students' cognitive understanding are derived from learning outcome test results. Meanwhile, the practicality and feasibility of the learning media are based on expert validation from material, media, and language experts. In addition, teacher interviews were used to confirm the relevance of gamification-based learning media to classroom needs. Therefore, every interpretation and analytical statement in this discussion section is grounded in empirical data rather than subjective assumptions.

Design Stage

In the design stage, the researcher designs a gamified learning media framework that is in accordance with the curriculum and characteristics of students. Gamification elements such as points, badges, and challenges are included to provide immediate feedback and increase student motivation. Materials on capitalization are presented in a more interactive and visual approach, and are enriched with activities that utilize *Google Sites* to access materials online, and *Wordwall* to create interactive quizzes that test students' understanding.

Table 2. Learning Media Design

Designed Aspects	Description
Learning Media Framework	The media is designed by adjusting the independent curriculum and characteristics of grade III MI students.
Gamification Elements	Include points elements, badges, and challenges to provide <i>feedback</i> (Maryo & Pujiastuti, 2022).
Material	The material is presented in an interactive and visual manner, utilizing easy-to-understand images, animations, videos, and examples.
Learning Activities	Students actively participate by choosing the menu presented in the media.
Use of Technology	Media creation integrates Canva, <i>Google Site</i> , and <i>Wordwall</i> .

Development Stage

In the development stage, learning media is created by leveraging Canva to design visuals of engaging and easy-to-understand materials. Google Sites are used to present material in a more interactive way, allowing students to access information through a site integrated with Wordwall to create gamification-based practice questions and quizzes. All of these elements are designed to enhance the student learning experience in a fun and effective way.

First, the researcher presents visual design images of the media to attract students' attention. Interactive elements such as icons, images, and buttons are designed to increase student engagement in learning. To start, students must click on the icon that is colored "green".



Figure 2. Media Display

Second, the researcher designed a media framework by paying attention to the curriculum and characteristics of the students. The design includes several elements, such as the Home Page as a starting point, CP & TP to set learning objectives, and an interactively presented Materials section. In addition, this media also utilizes videos to clarify concepts, games to add elements of motivation and exercise, and Evaluation to measure student understanding through gamification-based quizzes and assessments. All of these elements are designed to create an engaging, interactive, and effective learning experience.



Figure 3. Media Display

In the menu, CP & TP shows Learning Outcomes that require students to use capital letters correctly when writing, as well as Learning Objectives which include the ability of students to write names, places, and sentences with proper capital letters, as well as explain their use according to the rules.



Figure 4. CP & TP menu display

When you click the Materials menu, you will see an explanation of the difference between uppercase and lowercase letters, as well as the correct uppercase usage rules. Explanations include differences in the shape and size of capital letters (e.g., "A" vs "a") and outline some important rules, such as the use of capital letters at the beginning of

sentences, for people's names, geography, and in titles. This explanation is presented in a simple and easy-to-understand way for students.



Figure 5. Material menu display

Next, on the Video menu, a video taken from YouTube will appear, which discusses the use of capital letters.



Figure 6. Video Views

When the Game menu is clicked, it will display interactive questions. In this image, students are asked to choose the correct sentence from several available options. Each choice is answered by choosing one of the colored blocks. If the student chooses the wrong answer, the love in the upper right corner will decrease, indicating a decrease in points or progress. This provides competitive elements and challenges that can increase students' motivation to continue learning and try to answer correctly.



Figure 7. Game menu display

After the development stage is completed, the next step is to validate the learning media to material experts, linguists, and media experts. This validation aims to ensure that the media developed meets curriculum standards, can be understood well by students, and has visual and interactive qualities that support the learning process.

Table 3. Validation Instruments

Aspects	Assessment Indicators	Scale		
		3	2	1
Material Validation	1. Alignment of the material with the curriculum			
	2. Accuracy of the information presented.			
	3. Suitability of the material with the learning objectives.			
Language Validation	1. Clarity of the language used.			
	2. Language suitability with the student's level of development.			
	3. There are no grammatical or spelling errors.			
Media Validation and Visual Design	1. Readability and font consistency.			
	2. Color selection that supports visibility.			
	3. Use of eye-catching and relevant visual elements.			

Implementation Stage

The implementation results show an increase in students' learning outcomes after using the gamification-based learning media. As illustrated in Figure X, the average student score improved from the pretest result to the posttest result, indicating better understanding and mastery of the capitalization material. This improvement confirms that the developed learning media is effective in supporting students' learning achievement.

At the implementation stage, gamification-based learning media was tested in grade III of MI Nurul Huda Temayang with a total of 30 students. Learning begins with the teacher giving an overview of capital letters, followed by accessing the material through *Google Site* with visualizations from Canva. During the course of the student's access to the material, the teacher provides further explanations to ensure students' understanding of the material presented. Afterwards, students work on interactive quizzes via *Wordwall* to test their comprehension, with live feedback in the form of points, badges, and leaderboards that boost their motivation. During this activity, students were seen to be more active in discussions and showed increased motivation and activeness. The results of the questionnaire revealed that 95% of students felt that this medium helped them understand the material, and 85% felt more motivated to learn. This activity creates more fun and effective learning, integrating technology to support the understanding of capital letter use material.

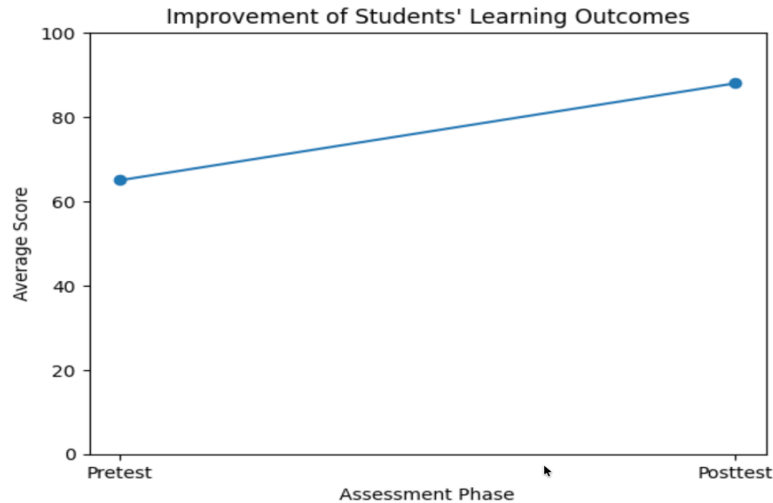


Figure 8. Improved Student's Learning Outcomes

Evaluation Stage

Evaluation was carried out by collecting data from observations, questionnaires, and learning outcome tests. The results of the evaluation showed that students experienced improvements in terms of material comprehension, motivation, and engagement. Students feel that this learning medium provides a more enjoyable experience and helps them understand the use of capital letters more effectively.

This research succeeded in developing gamification-based learning media for the use of capital letters in Indonesian in grade III MI Nurul Huda Temayang. This medium integrates gamification elements such as points, badges, and challenges, designed to increase student motivation, engagement, and understanding. By using Google Site for material access, Canva for visualizations, and Wordwall for interactive quizzes, these media create a more enjoyable and effective learning experience.

The results of the implementation showed that students were more active and motivated in participating in learning. They feel helped in understanding the material on the use of capital letters, and the learning process becomes more interesting and interactive. Overall, these learning media have proven to be effective in improving the quality of learning at the elementary school level, helping students understand the material in a more enjoyable way.

The Analysis stage confirmed that Indonesian language learning, particularly capitalization material, is still dominated by teacher-centered approaches which result in low student motivation, engagement, and learning outcomes. This finding aligns with Constructivist Learning Theory, which emphasizes that meaningful learning occurs when students actively participate in the learning process (Ayu Anastasha & Adyna Movitaria,

2019; Suh, 2022). Classroom observations and teacher interviews revealed that students require attractive, interactive, and student-friendly learning media suited to digital-era learners. These findings are consistent with previous studies indicating that technology-based learning helps increase students' interest, focus, and learning involvement because it provides varied and contextual learning experiences.

During the Design stage, the learning media was intentionally structured using a gamification framework as the main instructional strategy rather than merely an additional feature (Janković et al., 2023; Xi, 2020). The selection of gamification was theoretically grounded in Student Engagement Theory and Theory, which highlight the importance of intrinsic motivation, emotional involvement, and enjoyable learning experiences in supporting successful learning (Chiu, 2024; Howard et al., 2021; Mentari & Syarifuddin, 2020; Rahmawati et al., 2022; Santoni et al., 2024). The determination of learning objectives, selection of Google Sites, Canva, and Wordwall, as well as systematic learning flow ensured that the media was not only attractive but also pedagogically directed toward achieving learning competencies. This stage supports previous research which emphasizes that strong instructional design is a key factor in the successful implementation of digital learning media.

The Development stage resulted in a learning media product that was validated by material experts, media experts, and language experts. The validation results indicated that the media met the criteria of "feasible" to "highly feasible" in terms of content accuracy, media appearance, clarity, and instructional quality. These findings reinforce the concept of instructional design quality, which states that educational products must undergo expert validation to ensure academic credibility and pedagogical reliability (Branch, 2009; Richey et al., 2011). This result is also consistent with earlier development studies that found expert validation essential in ensuring product relevance to student needs and alignment with curriculum demands.

The Implementation stage provided empirical evidence that gamification-based learning media successfully increased students' motivation, engagement, and learning outcomes. The improvement in student achievement from pretest to posttest indicates better conceptual understanding. Questionnaire responses also showed that most students felt happy, challenged, and more focused while using the media. Theoretically, these results support behavioral learning theory, which emphasizes the role of reinforcement, rewards, and feedback in enhancing learning performance, as well as

strengthen previous studies which have found that gamification effectively fosters intrinsic motivation and improves academic achievement (Calza, 2020; Gunarti, 2019).

The Evaluation stage showed that the developed media was not only academically effective but also practical for classroom use. Formative evaluation was conducted at every stage to refine the product, while summative evaluation demonstrated that the media is feasible for sustainable classroom implementation. Logically, the improvement in students' learning outcomes occurs because gamification provides enjoyable learning experiences, meaningful challenges, structured feedback, and positions students as active learners (Lin et al., 2017). The implication of these findings is that gamification-based learning media can serve as an innovative and effective solution for Indonesian language learning at the elementary level, creating joyful, interactive, and meaningful learning experiences while opening opportunities for further research in different subjects and educational contexts.

CONCLUSION

Future studies are recommended to involve a larger and more diverse sample across different grade levels and school contexts to strengthen the generalizability of the findings. Further research can also apply this gamification-based media to other Indonesian language topics or different subjects to explore its broader effectiveness. Experimental research with control and experimental classes is suggested to obtain stronger causal evidence regarding the impact of gamification on students' achievement. In addition, qualitative studies may be conducted to explore students' learning experiences more deeply, including emotional involvement, learning behavior, and long-term motivation. Researchers are also encouraged to develop more advanced gamification features, integrate adaptive learning technology, and examine the long-term effects of gamification on students' learning outcomes and digital learning culture.

ACKNOWLEDGMENTS

We would like to thank Nahdlatul Ulama Sunan Giri University (UNUGIRI) and LPPM for the support and funding that has been provided for this research. The assistance provided is very valuable in developing this gamification-based learning media, which is expected to improve the quality of learning at MI Nurul Huda Temayang and other schools. Thank you for your trust and support.

REFERENCES

- Abrori, F., Lutfiana, A. F., Islam, P. A., Ekonomi, P., Padang, U. N., Pendidikan, M., & Yogyakarta, U. N. (2025). Penerapan Pendekatan Joyfull Learning untuk Meningkatkan Keterlibatan Siswa. *Journal of Educational Research and Community Service (JERCS)*, 1(1), 31–37. <https://journal.nabaedukasi.com/index.php/jerccs/article/view/5>
- Ayu Anastasha, D., & Adyna Movitaria, M. (2019). Constructivist Learning Approach to Improve Student Response and Outcomes Learning. *4th International Conference on Education*, 73–78. <https://api.semanticscholar.org/CorpusID:225802880>
- Branch, R. M. (2009). *Instructional Design: The ADDIE Approach*. Springer US.
- Calza, F. (2020). How Do Cultural Values Influence Entrepreneurial Behavior of Nations? A behavioral reasoning approach. *International Business Review*, 29(5). <https://doi.org/10.1016/j.ibusrev.2020.101725>
- Chiu, T. K. F. (2024). A self-determination theory approach to teacher digital competence development. *Computers and Education*, 214(1), 105017. <https://doi.org/10.1016/j.compedu.2024.105017>
- Dewi Niswatul Fithriyah, Suttriso, Nurul Mahruzah Yulia, & Fiki Dzakiyyatul Aula. (2022). Dampak Pembelajaran Daring Selama Pandemi Terhadap Kemampuan Kognitif Peserta Didik. *Jurnal Riset Madrasah Ibtidaiyah (JURMIA)*, 2(1), 173–180. <https://doi.org/10.32665/jurmia.v2i1.275>
- Dinda Amelia, Yulida Rizky Putri, & Ismi Salsabila Daulay. (2024). Analisis Perkembangan Bahasa Indonesia di Era Digital: Tantangan dan Peluang. *Fonologi: Jurnal Ilmuan Bahasa Dan Sastra Inggris*, 2(4), 249–257. <https://doi.org/10.61132/fonologi.v2i4.1235>
- Febrianti, A. (2024). Hubungan Kemampuan Literasi Sains Terhadap Keterampilan Berpikir Kreatif Siswa Kelas IV di SDN Sambirejo Surakarta Tahun Ajaran 2023/2024. *Jurnal Pendidikan Dasar*, 235–241. <https://doi.org/10.20961/jpd.v12i1.84955>
- Fithriyah, D. N., Habibullah, M. R., & Istiqomah, A. D. (2024). Pengembangan Media Pembelajaran Interaktif Berbasis Aplikasi Articulate Storyline 3 Pada Materi Days and Months Kelas Iv Di Mi Islamiyah Banat Senori Kabupaten Tuban. *Jurnal Pendidikan Dasar Flobamorata*, 5(2), 190–197. <https://doi.org/10.51494/jpdf.v5i2.1268>
- Fithriyah, D. N., Yulia, N. M., Amreta, M. Y., Utami, S. A., Guru, P., Ibtidaiyah, M., Nahdlatul, U., & Sunan, U. (2023). Penanaman Nilai-Nilai Karakter Komunikatif Melalui Permainan Uno Stacko. *Jurnal Ilmiah Pendidikan Citra Bakti*, 10(2), 421–429. <https://doi.org/10.38048/jipcb.v10i2.1293>
- Gazali, A., Fiqrilah, S. K., Izza, N., Fadia, N., Wahid, A. N., & Ainun, N. (2025). Efektivitas Penerapan Strategi Gamifikasi terhadap Motivasi Belajar Peserta Didik SMP. *Al-Ilmiya: Jurnal Pendidikan Islam*, 1(1), 172–180. <https://journal.al-afif.org/index.php/al-ilmiya/article/view/177>
- Gunarti, W. (2019). *Early Childhood Behavioral Methods and Basic Abilities*. UT.
- Howard, J. L., Bureau, J., Guay, F., Chong, J. X. Y., & Ryan, R. M. (2021). Student Motivation and Associated Outcomes: A Meta-Analysis From Self-Determination Theory. *Perspectives on Psychological Science*, 16(6), 1300–1323. <https://doi.org/10.1177/1745691620966789>
- Ihsan, M. S., & Pahmi, M. Z. (2022). Development of Etnoscience-Based Interactive IPA Module To Improve. *Jurnal Inovasi Pendidikan Dan Sains*, 3(3), 83–88. <https://doi.org/10.24042/biosfer.v15i1.22412>

- Janković, A., Maričić, M., & Cvjetičanin, S. (2023). Comparing Science Success of Primary School Students in The Gamified Learning Environment Via Kahoot and Quizizz. *Journal of Computers in Education*, 11, 471–494. <https://doi.org/10.1007/s40692-023-00266-y>
- Jovanović, A., & Milosavljević, A. (2022). VoRtex Metaverse Platform for Gamified Collaborative Learning. *Electronics*, 11(3), 317. <https://doi.org/10.3390/electronics11030317>
- Lin, M. H., Chen, H. C., & Liu, K. S. (2017). A study of The Effects of Digital Learning on Learning Motivation and Learning Outcome. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(7), 3553–3564. <https://doi.org/10.12973/eurasia.2017.00744a>
- Maknun, L., & Niswar, A. (2025). Implementation of Joyfull Learning for Deep Learning in Indonesian Language Lessons . *IJORER : International Journal of Recent Educational Research*, 6(5), 1593-1601. <https://doi.org/10.46245/ijorer.v6i5.997>
- Maryo, F. A. A., & Pujiastuti, E. (2022). Gamification in Efl Class using Quizizz as an Assessment Tool. *Proceedings Series on Physical & Formal Sciences*, 3, 75–80. <https://doi.org/10.30595/pspfs.v3i.268>
- Mentari, W. N., & Syarifuddin, H. (2020). Improving student engagement by mathematics learning based on contextual teaching and learning. *Journal of Physics: Conference Series*, 1554(1), 12003. <https://doi.org/10.1088/1742-6596/1554/1/012003>
- Muthoharoh, M. (2024). Konsep Project Penguatan Profil Pelajar Pancasila dan Profil Pelajar Rahmatan Lil Alamin (P5 PPRA) dalam Kurikulum Merdeka. *Tasyri' : Jurnal Tarbiyah-Syari'ah-Islamiah*, 31(01), 156–164. <https://doi.org/10.52166/tasyri.v31i01.616>
- Nafi'a, M. Z. I., Kuswandi, D., & Wedi, A. (2022). Pengembangan Desain Pembelajaran Multiliterasi Berbasis Tringo dalam Pembelajaran Menulis Teks Eksposisi Siswa SMA. *JKTP: Jurnal Kajian Teknologi Pendidikan*, 5(4), 349-358. <https://doi.org/10.17977/um038v5i42022p349>
- Rahmawati, Y., Taylor, E., Taylor, P. C., Ridwan, A., & Mardiah, A. (2022). Students' Engagement in Education as Sustainability: Implementing an Ethical Dilemma-STEAM Teaching Model in Chemistry Learning. *Sustainability*, 14(6), 3554. <https://doi.org/10.3390/su14063554>
- Richey, R. C., Klein, J. D., & W, T. M. (2011). *The Instructional Design Knowledge Base*. Taylor and Francis Group.
- Santoni, M. M., Basaruddin, T., Junus, K., & Lawanto, O. (2024). Automatic Detection of Students' Engagement During Online Learning: A Bagging Ensemble Deep Learning Approach. *IEEE Access*, 12, 96063–96073. <https://doi.org/10.1109/ACCESS.2024.3425820>
- Shelvia Amanda, Syahira Nabila Zulkim, Adrias Adrias, & Nur Azmi Alwi. (2024). Pengembangan Media Pembelajaran IPAS Berbasis Wordwall untuk Meningkatkan Hasil Belajar Peserta Didik. *Morfologi: Jurnal Ilmu Pendidikan, Bahasa, Sastra Dan Budaya*, 2(4), 304–313. <https://doi.org/10.61132/morfologi.v2i4.842>
- Srihartati, Y., & Nisa, K. (2023). Hubungan Program Literasi Dasar Dengan Minat Baca Siswa. *Journal of Classroom Action Research*, 5(2), 168–178. <https://doi.org/10.29303/jcar.v5i2.3263>
- Suh, W. (2022). Utilizing the Metaverse for Learner-Centered Constructivist Education in the Post-Pandemic Era: An Analysis of Elementary School Students. *Journal of Intelligence*, 10(1), 1-15. <https://doi.org/10.3390/jintelligence10010017>

- Suttriso, S., Shalihah, F. R., & Fithriyah, D. N. (2025). Development of Role Playing Based on Traffic Sign Miniature Learning Media in Elementary Schools. *Indonesian Journal of Education Methods Development*, 20(2), 1-8. <https://doi.org/10.21070/ijemd.v20i2.877>
- Ulimaz, A., Salim, B. S., Marzuki, I. Y., Syamsuddin, & Tumpu, A. B. (2024). Peningkatan Motivasi Dan Prestasi Belajar Dengan Penerapan Pembelajaran Berbasis Game. *Jurnal Review Pendidikan Dan Pengajaran*, 7, 1962–1976.
- Wahyuni, W., & Naim, Muh. R. (2019). Application of A Joyful Learning Strategy Based on Humor Communication to Improve the Interests and Achievements of Learning English. *Eduvelop*, 3(1), 56–63. <https://doi.org/10.31605/eduvelop.v3i1.423>
- Wardhani, K. K., Iriyanto, T., & Twinsari Maningtyas, R. D. (2024). Pengembangan Media Permainan Face Poly Untuk Menstimulasi Kemampuan Sosial Emosional Anak. *Jurnal Anak Usia Dini Holistik Integratif (AUDHI)*, 7(1), 81-89. <https://doi.org/10.36722/jaudhi.v7i1.3039>
- Xi, N. (2020). Does gamification affect brand engagement and equity? A study in online brand communities. *Journal of Business Research*, 109, 449–460. <https://doi.org/10.1016/j.jbusres.2019.11.058>
- Yulia, N. M., & Fithriyah, D. N. (2023). Pengembangan Media Pembelajaran Wayang Karakter Muslim pada Mata Pelajaran Pendidikan Kewarganegaran di MIN 3 Jombang. *Indonesian Journal of Islamic Elementary Education*, 2(2), 82–93. <https://doi.org/10.28918/ijiee.v2i2.6270>