



## DIGITAL PLATFORM-BASED GAMIFICATION: DEVELOPMENT OF LEARNING MEDIA TO SUPPORT THE ENGAGEMENT AND MOTIVATION OF HIGH SCHOOL STUDENTS

**Tuti Indriyani\*<sup>1</sup>, Dodo Tomi<sup>2</sup>, Nining Nuraida<sup>3</sup>**

<sup>1,2,3</sup> UIN Sulthan Thaha Saifuddin Jambi

e-mail: \*<sup>1</sup>[tutiindriyani@uinjambi.ac.id](mailto:tutiindriyani@uinjambi.ac.id); <sup>2</sup>[dodotomi@uinjambi.ac.id](mailto:dodotomi@uinjambi.ac.id); <sup>3</sup>[nining@uinjambi.ac.id](mailto:nining@uinjambi.ac.id)

### ***Abstract***

This research aims to develop gamified learning media based on digital platforms to support student engagement and motivation in Islamic Religious Education subjects at SMK N 4 Jambi City. The development model used is ADDIE (Analysis, Design, Development, Implementation, and Evaluation). Media validation was conducted by media experts, content experts, teachers, and students using a five-point Likert scale-based validation questionnaire. The validation results showed that the media was declared highly feasible, with an average validation score percentage of 88% for media experts, 85% for content experts, and teacher and student responses falling into the very good category, indicating the technical, content, and practical feasibility of the media for use in learning. Limited trials also revealed that this medium is capable of increasing student engagement and learning motivation, with engagement percentages reaching 78.4% and learning motivation increasing compared to conventional teaching methods. Thus, the gamified learning media based on a digital platform developed is suitable for use as an innovative alternative to support increased student engagement and learning motivation in vocational high schools.

**Keywords:** *Gamification; Islamic Religious Education; Digital Learning Media.; Student Engagement; Learning Motivation; Media Validation*

### ***Abstrak***

Penelitian ini bertujuan mengembangkan media pembelajaran gamifikasi berbasis platform digital untuk mendukung keterlibatan dan motivasi belajar siswa pada mata pelajaran Pendidikan Agama Islam di SMK N 4 Kota Jambi. Model pengembangan yang digunakan adalah ADDIE (Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi). Validasi media dilakukan oleh ahli media dan ahli materi, guru dan siswa dengan menggunakan angket validasi berbasis skala likert lima tingkat. Hasil validasi menunjukkan bahwa media dinyatakan sangat layak dengan persentase rata-rata skor validasi ahli media sebesar 88%, ahli materi 85%, dan respon guru serta siswa berada pada kategori sangat baik,

menunjukkan kelayakan teknis, konten, dan kepraktisan media untuk digunakan dalam pembelajaran. Uji coba terbatas juga mengungkapkan bahwa media ini mampu meningkatkan keterlibatan dan motivasi belajar siswa, dengan persentase keterlibatan mencapai 78,4% dan motivasi belajar meningkat dibandingkan metode pembelajaran biasa. Dengan demikian, media pembelajaran gamifikasi berbasis platform digital yang dikembangkan layak digunakan sebagai alternatif inovatif untuk mendukung peningkatan keterlibatan dan motivasi belajar siswa di sekolah menengah kejuruan

**Kata kunci:** *Gamifikasi; Pendidikan Agama Islam; Media Pembelajaran Digital; Keterlibatan Siswa; Motivasi Belajar; Validasi Media.*

## INTRODUCTION

The development of technology in the 21st century has brought major changes in the world of education, one of which is the emergence of independent and interactive online learning media. This media allows students to actively interact with the material, so that information can be conveyed effectively, quickly, and interestingly. Features such as learning videos, game-based interactive quizzes, and instant evaluation are able to increase students' motivation and active participation in the learning process (Nuramanah et al., 2020). However, conventional learning methods that tend to be passive are often less able to attract the interest of students who are already accustomed to digital technology, thus having an impact on their low motivation and academic achievement (Mayasari et al., 2025).

Education requires interactive technology-based innovations to increase cognitive-emotional engagement participation, as well as students' critical, collaborative, and creative skills in the 21st century. One of the latest trends in the world of education is the application of *gamification*. By combining elements of games such as competition and recognition of achievements, *gamification* has proven effective in increasing intrinsic motivation and active involvement of students in teaching and learning activities (Srimulyani, 2024). Gamification is a new way to make learning more fun. By adding game elements such as challenges and rewards, learning doesn't feel boring. The goal is for students to be more active and interesting to learn on their own (Hakeu et al., 2023). This learning model not only makes learning activities feel more interesting and less boring, but also triggers a sense of wanting to

achieve goals and a feeling of accomplishment that spurs students to participate consistently.(Amrina et al., 2022)

Motivation is very important in learning because without motivation, students tend to be passive, gamification has been proven to increase motivation, engagement and learning outcomes through game elements. Studies show gamification helps understand abstract concepts and increases creativity. Its success also depends on the readiness of teachers, infrastructure, and adaptation of methods according to the needs of students (Erdiana, 2025).

Various studies show that gamification contributes to encouraging active student engagement. Game elements such as challenges, rewards, and levels often attract interest making students show greater interest in the subject matter. Furthermore, gamification-based media is known to be able to encourage students to learn more actively, especially through a more personalized and fun learning experience (Yulian et al., 2023). Gamification has proven to be effective in making students more engaged in learning. Motivation plays a role as the main driver in learning activities. Without motivation, a person will tend to be passive and do not take the initiative to find out new things. When motivation decreases, interest in learning will also decrease, thus having an impact on the learning outcomes achieved (Valentinna et al., 2024). By integrating game elements into learning, we can create a more engaging and interactive learning environment, so that high school students will be more motivated to be active in the learning process.

The implementation of gamification requires careful planning to suit basic competencies and student needs. Further assessment is needed to develop an effective and personalized gamification model, so that it can increase motivational involvement and learning quality in secondary school (Enoch, 2023). Needs analysis at SMA 11 Muaro Jambi and SMK 4 Jambi City showed low student involvement and motivation in online and offline learning. Teachers and students need structured, interactive, and interesting gamification media to increase motivation and adjust student

characteristics (Teacher Interviews and Students of SMK 4 Jambi City, 2025).

This research was conducted to answer the challenge of low motivation and student learning engagement in the complex digital era. Conventional learning methods are considered not yet able to cope with these changes, so a more interesting and adaptive approach is needed. Gamification emerged as an effective solution because it was able to increase student motivation and participation through game elements such as challenges, competitions, and rewards. This research develops digital gamification-based learning media that is tailored to the basic competencies and individual needs of high school students. This contextual and interactive approach is expected to create a more meaningful learning experience and improve the quality of the learning process. Different from previous studies that were general, this study offers a comprehensive media design to simultaneously strengthen learning motivation and engagement. The results of this development are expected to be an innovative alternative that can be widely adopted in secondary learning based on digital technology.

## RESEARCH METHOD

This study uses the ADDIE (Analyze, Design, Develop, Implement, Evaluate) development model to produce and test the effectiveness of gamification-based learning application products that are relevant and beneficial to schools. This model aims to validate and develop learning products that meet the criteria of validity, practicality, and effectiveness according to the needs of users.

The development of gamification-based learning media is carried out with the ADDIE model with five stages of peelitian according to its acronym, namely analysis , design , develop , implementation , and *evaluation*.

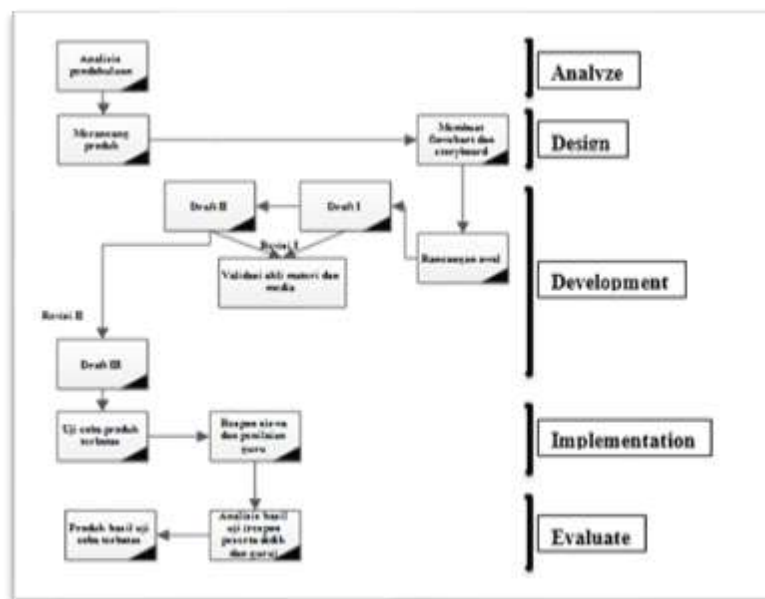


Figure 1. ADDIE Development Model Schema

The first stage is analysis. The analysis stage was carried out to identify and establish learning needs and collect information related to the development of gamification-based learning media on the material of avoiding life of debauchery, riya, takabur, and hasad in class X of SMK N 4 Jambi City, through needs analysis with student questionnaires and PAI teacher interviews, analysis of student characteristics related to abilities, characteristics, experiences, and learning styles as a reference for product design, Material analysis in the form of curriculum studies to determine learning outcomes and sub-materials to be implemented, objective analysis to align products with syllabus and competency achievement indicators so that learning takes place effectively, and educational technology analysis to determine the availability of facilities and infrastructure such as computers, sound systems, and projectors that support the implementation of learning.

The second stage is design. The design stage was carried out to design a software-assisted gamification product by forming a development team consisting of

researchers, validators of media, material, and language experts, and involving teachers and students of PAI class X of SMK N 4 Jambi City as respondents. This stage includes the preparation of a research schedule and the determination of product specifications in the form of a web-based application that features game-based learning features such as interactive quizzes, live game modes and homework, data storage of learning outcomes, character collection features to motivate students, and an easy-to-use interface on various devices without installation. In addition, the material is developed based on the principles of the Independent Curriculum and is presented in the form of educational games according to the PAI learning module, while the storyboard is made to describe the appearance and flow of the product as a reference in the development process.

The *kegita* stage is development. At this stage, the development of gamification-based learning media is carried out. After carrying out the analysis and design of gamification-based learning media, the next stage is the process of implementing product development with design specifications to physical form to create products. Producing products requires validation by a team of experts. After validation is carried out and the product is said to be valid or can be used, it is necessary to have a small group trial with the aim of seeing the advantages and disadvantages of a product after it is developed.

The fourth stage is implementation. The *implementation* stage is a stage to find out the response of students to the product developed after obtaining feasibility results by media, material and language experts. Then data related to the quality and feasibility of the product was then considered with PAI teachers and responses were used to conduct trials in small groups of 6-10 people, then with large groups of 20-40 people divided into several groups.

The evaluation stage aims to assess the extent of the success of the educational game as expected, identify product weaknesses, and allow revision through formative evaluations conducted by media, material, and language experts before

implementation, as well as summative evaluation conducted during implementation to determine the role of gamification-based learning media in the learning process.

The product trial was carried out after the multimedia learning was validated by media, material, and language experts to ensure the feasibility and accuracy of the media design as a gamification-based learning medium. The trial consisted of two stages, namely a small group trial with 6 students who had different abilities to identify the advantages and weaknesses of the product, and a large group trial with 15–30 students to get a more comprehensive and representative picture. The test results are used as the basis for final evaluation and refinement of the product before it is widely used. The subject of the study was a class X student at SMK N 4 Jambi City, whose response data was used as a guideline for product improvement and improvement.

The data analysis technique in this study uses qualitative and quantitative approaches. Non-test data such as observations, interviews, questionnaires of students' needs and characteristics, expert validation, as well as teacher assessments and student responses were analyzed qualitatively to obtain general conclusions about the feasibility of the media. Meanwhile, quantitative data from the questionnaire was processed using the Likert scale with several stages of analysis, namely: analysis of the needs of students given to class X of SMK N 4 Jambi City using a Likert scale of four to determine the level of product feasibility; validation analysis of media, material, language, and teacher assessments with a Likert scale of five to assess product quality based on very good to very poor categories; and analysis of student responses after the trial using the feasibility percentage formula to determine the feasibility level of the product developed based on the conversion of scores in the category of very unfeasible to very feasible.

## **RESULTS AND DISCUSSION**

### **Analysis**

The results of the research analysis conducted through interviews with PAI teachers and the distribution of questionnaires to grade X students of SMK N 4 Jambi City show that the development of gamification-based learning media is needed to increase student engagement and learning motivation in the digital era. Conventional approaches are considered less attractive to the younger generation, so the integration of elements such as points, levels, leaderboards, and interactive quizzes is an effective strategy to create a competitive and fun learning experience. Students need digital media that is easily accessible on a variety of devices, does not rely on a strong internet network, and has a user-friendly interface. The material analysis indicates the need to present interactive and contextual PAI content so that religious values can be understood in depth, while the analysis of learning objectives refers to the independent curriculum to form an independent Pancasila student profile that is relevant to students' lives. In terms of technology, gamification media needs to be designed to be interactive, inclusive, and adaptive to the limitations of devices and networks, so as to be able to stimulate active participation and increase the effectiveness of student learning in a collaborative and fun atmosphere.

### **Design**

At the design stage, the researcher designed a digital platform-based gamification learning media by forming a team consisting of developers (Dr. Tuti Indiriyani, S.Ag., M.Pd.I and Dodo Tomi, M.Pd), media expert validators (Nanda Gusriani, M.Pd), material expert validators (JM. Eka Futrianda), and involving PAI teachers and class X students of SMK N 4 Jambi City as respondents. The media specifications include PAI material that is adjusted to the learning outcomes of the Independent Curriculum, presented in the form of a digital platform that contains initial competencies, learning objectives, achievement criteria, educational game



guides, as well as games and questions related to the material to avoid living a life of extravagance, riya, takabur, and hasad. The material structure is systematically arranged with the principles of the Independent Curriculum, while the storyboard is designed to be attractive using a combination of text, images, animations, audio, and video on each page, such as login pages, registration, teacher dashboards, announcements, materials, as well as games and questions. This design is then evaluated formatively through the input of supervisors and validators to improve the multimedia design so as to produce a better, clearer, and ready initial product design for further development.

## **Development**

At this stage, development is carried out by realizing the *previously designed storyboard* design into a product. The product developed is in the form of gamification-based learning media in learning, especially in the material of avoiding living a life of extravagance, riya, sunnah, takabur and hasad. In the development stage, the product developed consists of a registration page, login page, registration page, add material page, games page and question page.

At this stage, the preparation of the product has been prepared from the creation of a question application for games, and all the needs that will be included in the application. The media listed in this gamification-based learning media are registration pages, login, notification menus, question menus and games menus. The following is a view of the gamification-based learning media developed.

After the product is developed, the media undergoes the validation stage, the product undergoes validation by the material and media validators to assess its feasibility and suitability. The assessment conducted by the material validators covers several aspects to ensure that the developed media is worth using. The assessment is carried out by media and material validators as follows.

**Table 1.** Media and Material Validator Assessment Results

Expert	Total Score	Percentage	Criterion
Media	58	83%	Good
Material	51	85%	Excellent

Table 1 presents the overall data of the validation results. Gamification-based learning media products are declared in the categories of "Excellent" and "Good" based on validation results from media experts, with a score percentage of 83%. Similarly, the validation results from the subject matter experts are classified as "very feasible" with a score percentage of 85%. The validator's assessment stated that gamification-based learning media is very feasible to be used in the world of education. The suggestions and inputs provided by validators are used to improve the development of the following gamification-based learning media that have gone through a validation and revision process according to the input of media and material expert lecturers, so that they are ready to be implemented

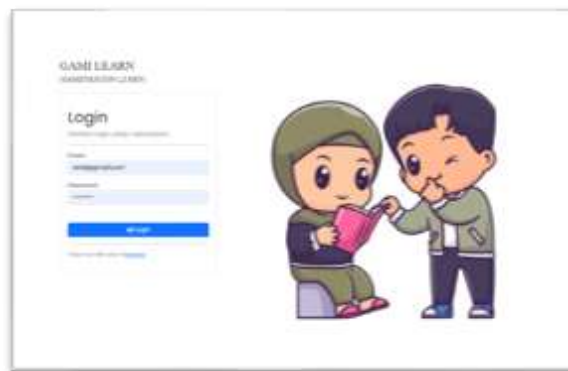


Figure 2. Login View

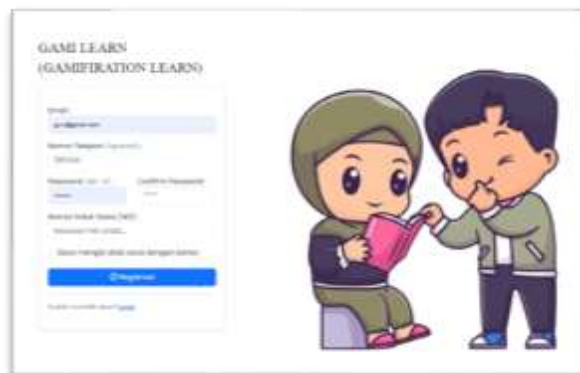


Figure 3. Register View



Figure 4. Logout View



Figure 5. Dashboard view

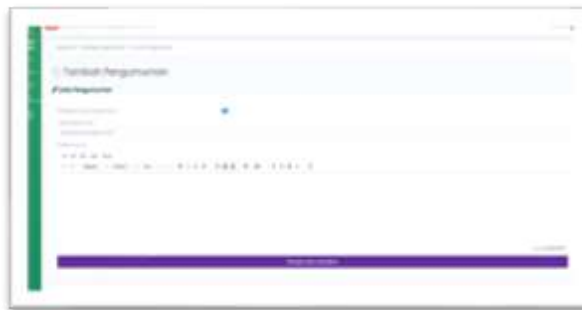


Figure 6. Show Announcements



Figure 7. Material Display



Figure 8. Game Display and Questions at the Same Time

## Implementation

The implementation stage was carried out with the assessment and response of PAI subject teachers at SMK N 4 Jambi City as well as filling out a response questionnaire for class X students with a small group of 5 people and a large group of

25 people. At this stage, the researcher first assesses and responds to gamification-based learning media products before being tested on students. The survey questionnaire and response were given to Mr. Adit Prasetya, S.Pd., Gr. As a teacher of Islamic Religious Education, the results obtained were as follows:

PAI Subject Teacher Assessment. The teacher's assessment of gamification-based learning media was carried out by Mr. Adit Prasetya, S.Pd., Gr., an Islamic Religious Education teacher at SMK N 4 Jambi City. Media is assessed on 16 aspects with a maximum score of 5 in each aspect. The results of the assessment showed a total score of 71, an average score of 4.4, and an eligibility percentage of 88.75%. The rating category is "Excellent". The media is considered to be very in line with the learning objectives of the Independent Curriculum PAI, effectively supports the development of character and spiritual competence, is easy to use, and is able to increase student involvement and motivation. Suggestions from teachers are the addition of video guides to make it easier for new teachers to use, as well as improved network stability and technical assistance response.

Small group trials (5 students). The small group trial was carried out on 5 students of class X PH with different cognitive levels. Respondents fill out a questionnaire in response to gamification media. The results showed a total score of 437 from 20 questions, with an eligibility percentage of 87.4% and the category of "Excellent". Media is considered very interesting, helps understand PAI material, increases the spirit of learning, and makes it easier for students to understand values such as avoiding extravagance, riya, sunnah, takabur, and hasad. Common comments show that media is effective in improving learning and facilitating the understanding of material. Large group trial (25 students). The large group trial was carried out on 25 students of class X PH. Respondents filled out a response questionnaire after using gamification media. The results showed a total score of 2109 from 20 questions, with an eligibility percentage of 84.36% and the category "Excellent". The media is considered very good in supporting the PAI learning process, especially in the

material on avoiding extravagance, riya, sunnah, takabur, and hasad. Student responses show that media is interesting, facilitates understanding, and increases motivation to learn.

**Student Engagement Analysis.** Student engagement was measured through an 8-item instrument on a scale of 1–5. The results showed a total engagement score of 790 out of 25 students, an average engagement of 31.6, and a percentage of 79%. The engagement category is "High". Student engagement ranged from 23 to 40, indicating that students were actively engaged during learning using gamified media.

**Analysis of Students' Learning Motivation.** Learning motivation was measured through an 8-item instrument on a scale of 1–5. The results showed a total motivation score of 784 out of 25 students, an average motivation of 31.36, and a percentage of 78.4%. The motivation category is "High". Student motivation ranges from 24 to 36, indicating that gamification media is able to significantly increase student learning motivation.

Based on teacher assessment data, student responses (small and large groups), as well as engagement and motivation analysis, the gamification-based learning media developed is very well developed and supports the PAI learning process, especially in the material on avoiding extravagance, riya, sunnah, takabur, and hasad. This medium is engaging, easy to use, effective in increasing student engagement and motivation, and is worth using with minimal technical improvements for optimal results in the field.

### **Eavluasi (*Evaluation*)**

The evaluation stage was carried out to review the suitability of gamification-based learning media products with initial expectations, with formative evaluations carried out at each stage of research, starting from analysis, design, development, to implementation. This evaluation is a guideline for revision or improvement in order to obtain a product that is suitable for use. Based on the results of validation by media experts and material experts, the developed product has been declared good and

worthy of testing to students at school, with the support of quantitative assessment data as well as comments and suggestions from experts.

Subject matter expert validation also showed an increase from the "poor" category (average 34.56%) to "very good" (average 51.85%), which confirms the accuracy of PAI content, conformity with Islamic teachings, and relevance to the Independent Curriculum. Gamification integration has been shown to be effective in encouraging student engagement and learning motivation, as well as supporting the achievement of PAI competencies and the internalization of religious and social values (Amri, 2025). The assessment of PAI teachers showed an average score of 4.4 (88.75%) in the "excellent" category, indicating that the medium was practically used and supported the achievement of PAI competencies. Media helps with a variety of teaching methods, facilitates the implementation of project-based learning, and increases student enthusiasm. Technical support and school facilities are considered sufficient, although it is necessary to strengthen the infrastructure and competence of teachers (Noviansyah et al., 2024).

Student responses showed eligibility percentages of 87.4% (small group) and 84.36% (large group), with the category of "excellent", describing high interest, focus, and motivation to learn. Quizzes, challenges, points, and leaderboard features make learning more enjoyable and encourage self-paced learning. Gamification media consistently improves student engagement, motivation, and learning outcomes (Irvani et al., 2025). Analysis of student engagement scores showed an average of 31.6 (79%) and learning motivation of 31.36 (78.4%), both in the "high" category. Media contributes positively to students' intrinsic and extrinsic motivation. Gamification in general is able to increase motivation and participation, although its long-term effectiveness depends on meaningful design and alignment with the principles of learning psychology (Assem et al., 2021).

The media is designed based on learning outcomes, learning objectives, and completeness criteria of the Independent Curriculum, supporting teachers' flexibility

to develop innovative, contextual, and student-centered teaching tools. This approach encourages creativity, learning independence, and internalization of moral and spiritual values (Julehah et al., 2025). PAI media not only presents cognitive material, but also strengthens the spiritual and moral dimension through interactive tasks and rewards. The integration of gamification creates an engaging learning environment that encourages active and creative exploration of religious values, supporting the strengthening of basic literacy and 21st century skills (Safitri et al., 2024). Gamification-based learning media provides practical implications for improving the quality of PAI learning. The advice for schools and teachers is to continue to develop interactive digital media and improve teachers' competence in the use of technology. Researchers are further advised to conduct broader trials and long-term evaluations, as well as the development of additional features such as interactive discussions and reflection on religious values (Anisa & Usman, 2025).

## CONCLUSION

The gamification-based learning media developed has proven to be effective in increasing student involvement and learning motivation in Islamic Religious Education (PAI) subjects at SMK N 4 Jambi City. The validation results by media experts and subject matter experts showed that this media was suitable for use after going through improvement, with the final quality criteria reaching the category of "good" to "excellent" in small group and large group trials.

The positive response from teachers and students shows that this media is easy to use, interesting, and able to increase the variety of learning methods and help achieve PAI competencies according to the Independent Curriculum. The average student engagement score reached 31.6 (79% percentage) and learning motivation reached 31.36 (78.4% percentage), both in the high category.

However, this research still has limitations, such as the limited scope of the trial in one school, the dependence on the availability of technological infrastructure,



and the need to improve teacher competence in the use of digital media. However, this gamified learning media has the potential to be an innovative alternative to improve the quality of PAI learning, especially in the context of strengthening character and student involvement in the digital era.

## REFERENCES

- Amri, M. F. (2025). *Integrating Online Gamification into Islamic Religious Education in Indonesian Elementary Schools*. 7(4), 460–469. <https://doi.org/10.19109/pairf.v7i4>
- Amrina, A., Akhiri, I., Lee, C., & Jansee, J. (2022). Using of Visual Application in Arabic Language Learning Class X MAN 1 Kuantan Singingi. *Sciencetechno: Journal of Science and Technology*, 1(1), 1–14. <https://doi.org/10.55849/sciencetechno.v1i1.1>
- Anisa, N., & Usman. (2025). Weak Integration of Digital Literacy in PAI Learning: A Literature Review at the School Level. *AEJ (Advances in Education Journal)*, 1(5). <https://journal.al-afif.org/index.php/aej/article/view/89>
- Assem, T. M., Toxanbayeva, N. K., Naubaeva, K. T., Ongarbayeva, S. S., & Akhmediyeva, K. N. (2021). A Meta-Analysis on the Impact of Gamification over Students' Motivation. *Journal of Intellectual Disability-Diagnosis and Treatment*, 9(4), 417–422. <https://doi.org/https://doi.org/10.6000/2292-2598.2021.09.04.9>
- Enoch, I. A. (2023). *Development Of Gamification Model For Personalized E-Learning*. OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE, NIGERIA. <https://doi.org/10.48550/arXiv.2404.15301>
- Erdiana, L. (2025). The Effectiveness of the Gamification Approach in the Learning Process of Grade VI Students in Elementary School. *CONSILIUM (Education and Counseling Journal)*, 5(02). <https://doi.org/10.36841/consilium.v5i2.6730>
- Hakeu, F., Pakaya, I. I., & Tangkudung, M. (2023). The Utilization of Gamification-Based Learning Media in the Learning Process at the Al-Azhfar Integrated MIS. *Awwaliyah: Journal of Madrasah Ibtidaiyah Teacher Education*, 6(2), 154–166. <https://doi.org/10.58518/awwaliyah.v6i2.1930>
- Irvani, A. I., Dewi, A. P., Gunawan, A. G., & Rahmانيar, A. (2025). Gamification and

- Student Engagement: Evidence, Challenges, and Future Directions. *Eduscape: Journal of Education Insight*, 3(3), 150–163. <https://doi.org/https://doi.org/10.61978/eduscape.v3i3.937>
- Julehah, Wasehudin, Lugowi, R. A., Subhan, & Aridin, M. N. (2025). The role of the independent curriculum shapes the character of students through learning Islamic religious education at SMPN 8 Cilegon. *Journal of Islamic Religious Education*, 4(1). <https://doi.org/https://doi.org/10.52434/jpai.v4i1.42266>
- Mayasari, R., Agoestyowati, R., & Rasyad, R. Z. (2025). International Journal Education and Computer Studies (IJECS) Analysis of the Influence of Instagram and TikTok on Motivation and Learning Outcomes of High School Students in Indonesia. *International Journal Education and Computer Studies (IJECS)*, 2(2), 103–113. <https://doi.org/DOI:https://doi.org/10.35870/ijecs.v5i2.4616>
- Noviansyah, Parida, A., & Dewi, I. K. (2024). Development of PAI media and teaching materials based on information technology. *Scholars : Journal of Education and Teaching*, 2(11). <https://jurnal.kolibi.org/index.php/cendikia/article/view/4094>
- Nuramanah, S. A., Soraya, I., & Hamdani, A. S. (2020). The Effect of the Use of the Quizizz Application on the Effectiveness of Islamic Religious Education Learning. *Bestari | Journal of Islamic Education Studies*, 17(1), 117. <https://doi.org/10.36667/bestari.v17i1.474>
- Safitri, D., Noviani, D., Anggraini, L., & Vitasari, D. (2024). *Gamification in Islamic Religious Education Effectiveness and Challenges in Increasing Students' Learning Motivation*. <http://jurnal.uinsu.ac.id/index.php/analyticaJournalAnalyticaIslamicaJournalhompage:http://jurnal.uinsu.ac.id/index.php/analytica/indexhttp://jurnal.uinsu.ac.id/index.php/analytic>
- Srimulyani. (2024). Using Gamification Techniques to Improve Student Learning and Engagement in the Classroom. *EDUCARE: Journal of Education and Health*. <https://doi.org/10.47668/jrrei.v2i2.1597>
- Valentinna, C. R., Kurnianti, E. M., & Hasanah, U. (2024). Gamification Learning Media to Increase the Learning Motivation of Elementary School Students. *Journal of Basic Science*, 8(3), 1722–1732. <https://doi.org/10.31004/basicedu.v8i3.7476>

Yulian, S. A. Y., Rengganis, A. A., Hazlina Nur, Siburian, P. Dela, Kadir, N. A., & Rahmadani, A. (2023). Literature Review: Development of Gamification Learning Media in Chemistry Learning. *Proceedings of the 2023 National Seminar on Chemistry*.

