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The Effect of Educandy-Based Gamified Learning Media on Students' Learning Outcomes in Islamic Education: A Pre-Experimental Study in Vocational High School

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Abstract

This study aims to examine the effect of Educandy-based gamified learning media on students' learning outcomes in Islamic Religious Education (PAI) at the vocational high school level. Employing a quantitative approach with a pre-experimental one-group pretest–posttest design, the study involved 32 tenth-grade students at SMK Pertanian Pembangunan Negeri Padang. Data were collected using a 30-item multiple-choice test that had been validated and tested for reliability, along with observation sheets to assess affective and psychomotor domains. Data analysis was conducted using descriptive statistics, Shapiro–Wilk normality test, paired sample t-test, normalized gain (N-Gain), and effect size (Cohen's d). The findings reveal a substantial increase in students' mean scores from 61.09 in the pretest to 83.56 in the posttest, with a statistically significant difference ($p < 0.05$). The N-Gain value of 0.58 indicates a moderate level of improvement, while the effect size of 1.54 reflects a strong practical impact. In addition, observational data show that students achieved very good performance in both affective and psychomotor domains. The novelty of this study lies in its integration of gamification-based learning with a multidimensional assessment of learning outcomes (covering cognitive, affective, and psychomotor aspects) within the context of Islamic Religious Education, particularly in vocational schools where such approaches remain underexplored. Unlike prior studies that predominantly focus on cognitive achievement or motivation, this research provides a more holistic evaluation of learning effectiveness. The study contributes both theoretically and practically by extending the application of constructivist, cognitive multimedia, and motivational (ARCS) frameworks into Islamic education contexts, while also offering empirical evidence that gamified learning can enhance not only academic achievement but also student engagement and skill development. Practically, it provides insights for educators and policymakers in designing interactive, student-centered learning environments through accessible digital platforms.

Keywords: Educandy, Gamified Learning, Learning Outcomes, Islamic Religious Education, Vocational Education

Introduction

Islamic Religious Education (Pendidikan Agama Islam/PAI) plays a strategic role in shaping students' character, morality, and personality. It is not merely oriented toward cognitive achievement but also encompasses affective development and psychomotor skills in practicing Islamic values in daily life (Mardiani, 2021). Therefore, the success of PAI learning cannot be measured solely by academic scores but also by students' ability to internalize and actualize Islamic teachings in real contexts (Hanapi et al., 2025). In this regard, contemporary Islamic education emphasizes holistic learning that integrates knowledge, attitudes, and skills as an inseparable unity.

However, empirical evidence indicates that PAI learning outcomes remain suboptimal. Students often experience difficulties in understanding abstract and conceptual materials, which leads to low mastery of learning content (Ilham & Eka, 2024). This condition is exacerbated by the persistent use of conventional teaching methods, such as lecture-based instruction and textbook-centered learning, which tend to limit student engagement and active participation (Kandia et al., 2023). Such pedagogical practices are increasingly misaligned with the demands of 21st-century education, which require interactive, student-centered, and technology-integrated learning environments.

The challenge becomes more complex in the context of digital-native learners who are accustomed to technology-driven, visual, and interactive learning experiences. A mismatch between instructional strategies and students' learning characteristics can significantly reduce motivation, engagement, and ultimately learning outcomes (Wicaksono et al., 2021). Previous studies have emphasized that integrating digital learning media is essential to foster meaningful learning and improve student achievement in contemporary classrooms (Mayer, 2020). In Islamic education contexts, innovative media also play a crucial role in strengthening not only cognitive understanding but also religious character formation (Fauzi et al., 2024).

These issues are also evident at SMK Pertanian Pembangunan Negeri Padang, where preliminary observations and interviews revealed that PAI learning is still dominated by teacher-centered approaches with limited use of interactive media. As a result, students tend to be passive, less focused, and easily disengaged during the learning process. Furthermore, most students have not achieved the Minimum Mastery Criteria (KKM), indicating the urgent need for innovative instructional strategies to enhance learning quality.

One promising approach to address this issue is the use of gamification-based learning media. Gamification refers to the integration of game elements into non-game contexts to enhance user engagement and motivation (Deterding et al., 2011). In educational settings, gamification has been shown to create more interactive, enjoyable, and meaningful learning experiences, thereby encouraging active student participation. A meta-analysis by Sailer and Homner (2020) demonstrates that gamification has a significant positive effect on both learning outcomes and student motivation. Elements such as

points, challenges, and immediate feedback are particularly effective in enhancing engagement and reinforcing learning processes. Moreover, gamified learning aligns with constructivist principles, where knowledge is actively constructed through meaningful interaction and experience (Schunk, 2012).

One of the emerging tools that facilitates gamified learning is Educandy, a digital platform that enables teachers to transform learning materials into interactive activities such as quizzes, word games, and matching exercises. This platform has gained increasing attention due to its ease of use and its ability to create engaging and varied learning experiences (Widiastuti et al., 2021). Features such as word search, matching pairs, and quizzes allow students to actively engage with learning content, thereby improving comprehension and retention (Fakhrunnisaa & Mardiawati, 2024). In addition, interactive digital media have been found to significantly enhance students' learning outcomes by increasing attention, motivation, and participation (Muhaidhori et al., 2025).

Several previous studies have reported positive effects of gamification and Educandy on students' motivation and learning outcomes. For instance, Rahmanti et al. (2024) found that Educandy significantly improves students' motivation and academic performance. Similarly, recent research on gamified learning platforms indicates their effectiveness in enhancing student engagement and learning achievement across various educational contexts (Hamari et al., 2014). However, other studies suggest that the effectiveness of such media may vary depending on implementation strategies, learning contexts, and student characteristics (Fakhrunnisaa & Mardiawati, 2024). These inconsistent findings indicate a research gap that necessitates further investigation, particularly in the context of Islamic Religious Education at the vocational high school level, which remains underexplored.

In addition, while previous studies have primarily focused on cognitive outcomes, limited research has examined the comprehensive impact of gamified learning on affective and psychomotor domains within Islamic education. This is important because PAI inherently aims to develop holistic competencies, including moral attitudes and religious practices. Therefore, this study offers novelty by integrating gamification-based learning with a multidimensional assessment of learning outcomes (cognitive, affective, and psychomotor) within the specific context of vocational Islamic education.

Based on the aforementioned gaps, this study aims to examine the effect of Educandy-based gamified learning media on students' learning outcomes in Islamic Religious Education at a vocational high school. Using a pre-experimental design, this study contributes to the growing body of literature on gamified learning by providing empirical evidence from a specific educational and cultural context. Furthermore, this study is expected to offer both theoretical contributions to the development of gamification in Islamic education and practical implications for teachers in designing more effective, engaging, and student-centered learning environments.

Method

This study employed a quantitative approach using a pre-experimental design to examine the effect of Educandy-based gamified learning media on students' learning outcomes in Islamic Religious Education (PAI). A quantitative approach was selected because this study aims to measure the relationship between variables objectively through numerical data and statistical analysis, enabling generalizable and empirical conclusions (Sugiyono, 2020). The pre-experimental design was chosen due to practical constraints in educational settings, particularly the inability to randomly assign participants into control and experimental groups. However, it is acknowledged that such a design has limitations in controlling external variables and establishing strong causal inference (Creswell & Creswell, 2018; Shadish et al., 2002). Therefore, this study emphasizes careful procedural control and statistical analysis to strengthen internal validity.

The research design adopted was the One-Group Pretest–Posttest Design, which involves a single group of participants measured before and after the intervention. Initially, students were given a pretest to assess their baseline knowledge. Subsequently, the intervention was implemented through the use of Educandy-based gamified learning media during PAI instruction. The treatment was conducted systematically over several instructional sessions (four meetings), ensuring consistency in content delivery, learning objectives, and teacher facilitation. After the intervention, a posttest was administered to evaluate changes in students' learning outcomes. The difference between pretest and posttest scores was used as the primary indicator of the treatment effect. Although this design does not fully eliminate threats such as maturation and testing effects, it remains widely used in educational research for preliminary investigations of instructional innovations (Fraenkel et al., 2012).

This study was conducted at SMK Pertanian Pembangunan Negeri Padang during the 2025/2026 academic year. The population consisted of 133 tenth-grade students. The sample was determined using proportionate stratified random sampling to ensure that each class was proportionally represented, thereby enhancing the representativeness of the sample (Sugiyono, 2020). Based on this technique, a total of 32 students were selected as research participants. This sampling method is considered appropriate for heterogeneous populations and contributes to minimizing sampling bias (Etikan & Bala, 2017).

The research instruments included tests, observation sheets, and documentation. The cognitive learning outcomes were measured using a 30-item multiple-choice test administered during both pretest and posttest phases. The test items were developed based on curriculum indicators and aligned with learning objectives to ensure content validity. In addition, observation sheets were used to assess students' affective and psychomotor domains during the learning process, focusing on indicators such as participation, collaboration, and engagement. Documentation was used to

support the data, including school profiles, student records, and learning implementation reports.

Prior to data collection, the instruments were subjected to validity and reliability testing. Content validity was ensured through expert judgment, while empirical validity was assessed using the Pearson Product Moment correlation. Reliability testing was conducted using Cronbach's Alpha with the assistance of SPSS software, where a coefficient above 0.70 was considered acceptable (Taber, 2018). The results indicated that all instruments met the required validity and reliability standards, confirming their suitability for research purposes. This rigorous instrument testing is essential to ensure measurement accuracy and consistency in quantitative research (Field, 2013).

Data collection procedures were carried out in three main stages: pretest administration, treatment implementation, and posttest administration. During the treatment phase, Educandy was integrated into classroom instruction through interactive quizzes, word games, and matching activities designed to enhance student engagement. The teacher acted as a facilitator, guiding students through gamified learning activities while maintaining alignment with instructional objectives. To ensure treatment fidelity, standardized lesson plans were used, and the same instructional procedures were applied across all sessions.

The collected data were analyzed using both descriptive and inferential statistics. Descriptive analysis was employed to summarize students' learning outcomes, including mean, median, standard deviation, minimum, and maximum scores. Inferential analysis was conducted to test the research hypothesis. Prior to hypothesis testing, the normality of the data distribution was examined using the Shapiro–Wilk test, which is recommended for small sample sizes (Razali & Wah, 2011). Since the data were normally distributed, hypothesis testing was performed using the Paired Sample t-Test to determine whether there was a statistically significant difference between pretest and posttest scores.

In addition, the effectiveness of the intervention was evaluated using the normalized gain (N-Gain) score to measure the magnitude of learning improvement (Hake, 1998). To further assess the practical significance of the treatment, effect size was calculated using Cohen's d, where values above 0.80 indicate a large effect (Cohen, 1988). By combining significance testing and effect size analysis, this study not only identifies whether the intervention is statistically significant but also evaluates its educational impact in a more meaningful way.

Finally, ethical considerations were taken into account throughout the research process. Permission was obtained from the school, and participants were informed about the purpose of the study. Confidentiality and anonymity of student data were maintained to ensure compliance with research ethics standards (Creswell & Creswell, 2018). Despite the limitations of the pre-experimental design, this study provides valuable preliminary evidence

regarding the effectiveness of gamified learning media in Islamic education contexts.

Results and Discussion

Results

This study aims to describe students' learning outcomes before and after the implementation of Educandy-based gamified learning media in Islamic Religious Education (PAI), particularly on the topic of *zina*. The data were collected through pretest and posttest assessments administered to 32 tenth-grade students at SMK Pertanian Pembangunan Negeri Padang.

The pretest results indicate that students' initial abilities were varied. The distribution of pretest scores is presented in Table 1.

Table 1. Distribution of Pretest Scores

No	Score Interval	Frequency	Percentage
1	0–40	5	15.63%
2	41–60	9	28.13%
3	61–80	10	31.25%
4	81–100	8	25.00%
Total		32	100%

Based on Table 1, the largest proportion of students (31.25%) scored within the 61–80 range, while 15.63% of students were still in the low-score category (0–40). These results indicate heterogeneous baseline performance among participants prior to the intervention.

Following the implementation of Educandy-based learning media, a posttest was conducted to measure students' learning outcomes. The distribution of posttest scores is presented in Table 2.

Table 2. Distribution of Posttest Scores

No	Score Interval	Frequency	Percentage
1	0–40	0	0%
2	41–60	1	3.12%
3	61–80	10	31.25%
4	81–100	21	65.63%
Total		32	100%

Table 2 shows a shift in score distribution after the intervention, with the majority of students (65.63%) achieving scores in the 81–100 range. No students remained in the lowest score category (0–40), indicating an overall upward trend in student performance.

A comparison of pretest and posttest results is further presented through descriptive statistics in Table 3.

Table 3. Descriptive Statistics of Pretest and Posttest

Data	N	Min	Max	Mean	Median	Std. Deviation
Pretest	32	21	95	61.09	63	21.92
Posttest	32	58	100	83.56	84	11.04

Table 3 indicates an increase in the mean score from 61.09 (pretest) to 83.56 (posttest). In addition, the standard deviation decreased from 21.92 to 11.04, suggesting reduced variability in students' scores after the intervention.

Prior to hypothesis testing, a normality test was conducted using the Shapiro–Wilk test. The results showed that the data were normally distributed (Sig. = 0.073 > 0.05), allowing the use of parametric statistical tests.

The hypothesis was tested using a Paired Sample t-test. The results are presented in Table 4.

Table 4. Paired Sample t-test Results

Mean Difference	t	df	Sig.
-22.47	-8.692	31	0.000

The significance value of 0.000 ($p < 0.05$) indicates a statistically significant difference between pretest and posttest scores.

Furthermore, the N-Gain analysis yielded a value of 0.58, which falls into the medium category. Meanwhile, the effect size calculated using Cohen's d was 1.54, indicating a large effect.

In addition to cognitive outcomes, this study also assessed students' affective and psychomotor domains during the learning process through observation. The results are presented in Tables 5 and 6.

Table 5. Affective Observation Results

Aspect	Score
Average	88.05
Highest	100
Lowest	70
Category	Very Good

Table 6. Psychomotor Observation Results

Aspect	Score
Average	90.00
Highest	100
Lowest	75
Category	Very Good

The observational data indicate that students demonstrated high levels of affective and psychomotor performance during the learning process.

Discussion

The findings of this study indicate that the implementation of Educandy-based gamified learning media is associated with a significant improvement in students' learning outcomes in Islamic Religious Education. This is reflected in the increase in mean scores from 61.09 to 83.56, supported by statistical evidence from the paired sample t-test ($p < 0.05$). In addition, the reduction in standard deviation suggests a more consistent distribution of student performance after the intervention. While these results demonstrate a positive trend, it is important to interpret them cautiously, given the absence of a control group, which limits the strength of causal inference (Shadish et al., 2002).

From a pedagogical perspective, the improvement in learning outcomes can be linked to a shift from teacher-centered to student-centered learning practices. Prior to the intervention, instruction relied heavily on conventional methods, resulting in passive learning behaviors. The integration of Educandy introduced interactive and participatory learning activities, encouraging students to actively engage with the material. This finding aligns with contemporary educational research emphasizing the importance of active learning environments in improving student achievement (Freeman et al., 2014). However, it is also necessary to consider that increased engagement alone does not automatically lead to deeper conceptual understanding unless it is accompanied by structured instructional guidance.

Theoretically, these findings can be interpreted through the lens of constructivist learning theory. As suggested by Piaget and Vygotsky (in Rianduli & Sianturi, 2023), knowledge is constructed through active interaction with the environment and social collaboration. In this context, Educandy facilitates "learning by doing," allowing students to construct knowledge through interactive tasks and peer interaction. Furthermore, the social dimension of gamified learning supports the concept of the Zone of Proximal Development (ZPD), where learners achieve higher levels of understanding through guided participation. Nevertheless, it should be noted that constructivist environments require careful scaffolding; without it, students may focus more on game mechanics than on conceptual learning outcomes.

From a cognitive perspective, the effectiveness of Educandy can also be explained by increased attention and cognitive engagement. Interactive media are known to enhance information processing by capturing learners' attention and reducing cognitive overload when designed appropriately (Mayer, 2020). The use of game elements such as instant feedback and repetition in Educandy may contribute to improved retention and understanding. This supports previous findings that multimedia and interactive tools can enhance learning effectiveness when aligned with cognitive principles (Clark & Mayer, 2016). However, excessive gamification elements may also lead to cognitive

distraction if not properly balanced, which highlights the importance of instructional design.

The N-Gain result (0.58, moderate category) indicates that the improvement in learning outcomes is meaningful but not optimal. This suggests that while Educandy contributes positively to learning, it may not be sufficient as a standalone intervention. In contrast, the large effect size (Cohen's d = 1.54) indicates a strong practical impact. This discrepancy between moderate gain and large effect size warrants further investigation, as it may reflect differences in baseline variability or sensitivity of measurement instruments (Cohen, 1988). Similar patterns have been observed in other studies on gamified learning, where statistical significance does not always correspond directly with substantial learning gains (Hamari et al., 2014).

The findings also reinforce the theoretical framework of gamification, which posits that game elements such as challenges, rewards, and feedback can enhance motivation and engagement (Deterding et al., 2011). In this study, these elements appear to have contributed to increased student participation and interest. This is consistent with the meta-analysis by Sailer and Homner (2020), which highlights the positive effects of gamification on cognitive and motivational outcomes. However, recent studies suggest that the effectiveness of gamification is highly context-dependent and influenced by factors such as instructional design, learner characteristics, and subject matter (Toda et al., 2019). Therefore, the success of Educandy in this study should not be generalized without considering these contextual variables.

In addition, the ARCS motivation model (Keller, 2016) provides a useful framework for understanding how Educandy influences learning outcomes. The platform appears to address the four components of motivation: capturing attention through interactive features, ensuring relevance through contextualized tasks, building confidence through achievable challenges, and providing satisfaction through immediate feedback. While these elements contribute to motivation, it is important to recognize that motivation alone does not guarantee long-term learning unless it is supported by meaningful cognitive processing.

Beyond cognitive outcomes, this study also found high performance in affective and psychomotor domains, indicating that students demonstrated positive attitudes and active participation during the learning process. This supports Bloom's taxonomy, which emphasizes the multidimensional nature of learning outcomes (Putra et al., 2024). In the context of Islamic education, this finding is particularly significant, as PAI aims not only to develop knowledge but also to cultivate values and behaviors. Similar findings have been reported in studies highlighting the role of interactive and technology-based media in fostering holistic learning in Islamic education (Fauzi et al., 2024).

Despite these positive findings, several limitations must be acknowledged. First, the use of a pre-experimental design without a control group limits the ability to attribute observed changes solely to the intervention.

Second, the relatively small sample size reduces the generalizability of the findings. Third, the study does not account for other influencing factors such as prior knowledge, learning styles, or teacher competence, which may have contributed to the results. Future research should employ more rigorous experimental designs, such as randomized controlled trials, and incorporate additional variables to provide a more comprehensive understanding of the effectiveness of gamified learning.

In terms of implications, this study suggests that Educandy-based gamified learning media can serve as a promising alternative for enhancing learning outcomes in Islamic Religious Education. However, its implementation should be accompanied by sound pedagogical strategies, appropriate instructional design, and consideration of contextual factors. Rather than viewing gamification as a universal solution, it should be positioned as a complementary tool within a broader instructional framework aimed at promoting meaningful and holistic learning.

The novelty of this study lies in the integration of gamification-based learning media (Educandy) with a comprehensive and multidimensional assessment of learning outcomes within the context of Islamic Religious Education (PAI), particularly at the vocational high school level, which remains relatively underexplored in prior literature. Unlike many previous studies that primarily focus on cognitive achievement or learning motivation, this study simultaneously examines the cognitive, affective, and psychomotor domains, thereby providing a more holistic understanding of the impact of gamified learning in Islamic education. In addition, this research offers a context-specific perspective by applying gamification to PAI content that is conceptual and normative in nature (i.e., the topic of *zina*), which is often perceived as difficult to teach in an engaging and interactive manner. Therefore, this study extends the scope of gamification research beyond general subjects to include value-based and character-oriented education.

The contributions of this study are both theoretical and practical. Theoretically, this research strengthens and extends the conceptual framework of gamified learning effectiveness by integrating constructivist theory, cognitive multimedia learning theory, and the ARCS motivation model within the context of Islamic Religious Education. The findings also provide empirical evidence that gamification not only improves learning outcomes statistically but also contributes to reducing disparities in student performance while enhancing affective and psychomotor development. Practically, this study offers important implications for teachers and educational practitioners in designing more innovative, interactive, and student-centered learning environments through the use of accessible digital platforms such as Educandy. Furthermore, this research can serve as a reference for educational policymakers in promoting the integration of gamification-based learning technologies as part of educational transformation in the digital era, particularly in improving the quality of Islamic Religious Education.

Conclusion

The findings of this study reveal that the use of Educandy-based gamified learning media has a greater impact on students' learning outcomes in Islamic Religious Education than previously anticipated. This is evidenced by the substantial increase in mean scores from 61.09 to 83.56, accompanied by a statistically significant difference ($p = 0.000$), as well as a reduction in score variability, indicating more equitable learning outcomes among students. In addition, the moderate N-Gain (0.58) and large effect size (Cohen's $d = 1.54$) suggest that the intervention is not only statistically significant but also practically meaningful. These findings challenge the conventional assumption that PAI learning, particularly on abstract and normative topics, is inherently less responsive to interactive and technology-based approaches, thereby opening new avenues for pedagogical innovation and discussion.

From a scientific perspective, this study reinforces previous findings on the effectiveness of gamification in enhancing learning outcomes while also extending the discussion by demonstrating its applicability within Islamic Religious Education, including cognitive, affective, and psychomotor domains. At the same time, it calls into question the assumption that gamification primarily affects motivation rather than holistic learning outcomes. By integrating multidimensional assessment and contextual application, this study contributes a more comprehensive understanding of gamified learning and enriches scholarly discourse in the field of educational technology and Islamic education.

Nevertheless, this study has several limitations. It is based on a relatively small sample size and a specific educational context, which may limit the generalizability of the findings. Furthermore, the use of a pre-experimental design without a control group restricts the ability to draw strong causal conclusions. Therefore, future research is recommended to employ more rigorous experimental designs, such as randomized controlled trials, and to involve larger and more diverse samples. Additionally, further studies should consider examining other influencing variables, such as student motivation, learning styles, and teacher competence, as well as exploring the effectiveness of gamified learning media across different subjects and educational levels to achieve a more comprehensive understanding.

References

Clark, R. C., & Mayer, R. E. (2016). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (4th ed.). Wiley.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE

Publications.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining gamification. In *Proceedings of the 15th International Academic MindTrek Conference* (pp. 9–15).

Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal, 5*(6), 1–3.

Fakhrunnisaa, N., & Mardiawati, M. (2024). The effect of Educandy-based educational games on learning motivation in Islamic Religious Education. *Jurnal MediaTIK, 6*(1), 1–5.

Fauzi, I., Sari, D. N., & Junaidi, M. (2024). Pengembangan budaya religius pada pembelajaran pendidikan agama Islam di sekolah. *Tarbiyatuna: Jurnal Pendidikan Islam, 17*(1), 49–59.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE Publications.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th ed.). McGraw-Hill.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences, 111*(23), 8410–8415.

Hake, R. R. (1998). Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data. *American Journal of Physics, 66*(1), 64–74.

Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? A literature review of empirical studies on gamification. In *Proceedings of the 47th Hawaii International Conference on System Sciences* (pp. 3025–3034).

Hanapi, J., Amaluddin, Jusrianti, Sutriana, & Hasnita. (2025). Pengembangan keterampilan sosial siswa melalui pembelajaran Pendidikan Agama Islam di sekolah menengah. *Sulawesi Tenggara Educational Journal, 5*(1), 377–384.

Ilham, M., & Eka, F. (2024). Analisis kesulitan pembelajaran PAI dan upaya guru dalam meningkatkan minat belajar siswa. *Journal of Education, 6*(4), 21430–21437.

Kandia, I. W., Suarningsih, N. M., & Suwarma, D. M. (2023). The strategic role of learning media in optimizing student learning outcomes. *Journal of Education Research, 6*(1), 508–514.

Keller, J. M. (2016). Motivation, learning, and technology: Applying the ARCS-V motivation model. *Participatory Educational Research, 3*(2), 1–13.

Mardiani. (2021). Revitalisasi pendidikan agama Islam dalam mendorong pendidikan karakter bangsa. *El-Ta'dib: Journal of Islamic Education, 1*(2), 131–144.

Mayer, R. E. (2020). *Multimedia learning* (3rd ed.). Cambridge University Press.

Muhaidhori, H., Fauzi, I., & Hadi, Z. (2025). Interactive visual learning media to enhance students' learning outcomes in Islamic religious education. *Allimna: Jurnal Pendidikan Profesi Guru, 4*(2), 24–35.

Nurfadhillah, S., Ningsih, D. A., Ramadhania, P. R., & Sifa, U. N. (2021). Peranan media pembelajaran Flipgrid dalam meningkatkan keterampilan berbicara siswa. *PENSA: Jurnal Pendidikan dan Ilmu Sosial, 3*(2), 243–255.

Pagarra, H., & Syawaludin, D. (2022). *Media pembelajaran*. Badan Penerbit UNM.

Putra, R. P., Yaqin, M. A., & Saputra, A. (2024). Objek evaluasi hasil belajar pendidikan agama Islam: Analisis taksonomi Bloom. *Al-Karim: Journal of Islamic and Educational Research, 2*, 149–158.

Rahmanti, N., Halimah, L., & Sutini, A. (2024). The effect of Educandy media on students' motivation and learning outcomes. *Action Research Literate, 8*(3), 595–598.

Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors, and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics, 2*(1), 21–33.

Rianduli, R., & Sianturi, E. (2023). Metode konstruktivisme dalam pembelajaran seni musik. *Jurnal Musik dan Pendidikan Musik, 4*(1), 33–52.

Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. *Educational Psychology Review, 32*(1), 77–112.

Schunk, D. H. (2012). *Learning theories: An educational perspective* (6th ed.). Pearson Education.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Houghton Mifflin.

Sugiyono. (2020). *Metode penelitian kuantitatif, kualitatif, dan kombinasi (mixed methods)*. Alfabeta.

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments. *Research in Science Education, 48*(6), 1273–1296.

Toda, A. M., Valle, P. H. D., & Isotani, S. (2019). The dark side of gamification: An overview of negative effects of gamification in education. *Educational Technology & Society, 22*(2), 94–111.

Wicaksono, D. S., Kasmantoni, & Walid, A. (2021). Peranan pondok pesantren dalam menghadapi generasi alfa dan tantangan era Society 5.0. *Jurnal Pendidikan Tematik, 2*(2), 181–189.

Widiastuti, R., Sayekti, I. C., & Eryani, R. (2021). Improving learning outcomes through Educandy quiz media. *Jurnal Basicedu, 5*(4), 2082–2089.