ACADEMIC JOURNAL PERSPECTIVE:
Education, Language, and Literature
https://jurnal.ugj.ac.id/index.php/Perspective/index
p-ISSN 2354-7340
e-ISSN 2621-6981

EXPLORING THE EFFECTIVENESS OF GAME-BASED LEARNING (GBL) FOR ENHANCING STUDENTS' CREATIVITY IN WRITING CLASS

Virga Putra Darma[*)], Yuni Awalaturrohmah Solihah[2)], Viar Dwi Kartika[3)]
Institut Prima Bangsa, Cirebon, Indonesia[*)],
Universitas Catur Insan Cendekia, Cirebon, Indonesia [2,3)]
virgaputradarma@gmail.com[*)]

Received: April 2, 2025 Accepted: May 3, 2025 Published: May 30, 2025

Abstract
This study investigates the efficacy of game-based learning (GBL) in the context of writing instruction, specifically examining its influence on students' creativity in Institut Prima Bangsa. The aim of this study is to ascertain whether GBL can foster enhanced creative writing abilities for the students. By analyzing the relative effectiveness of these pedagogical strategies, the study aspires to yield significant insights into the ways in which GBL affects students' writing competencies and creative expression. An experimental research design was utilized, comprising two distinct student groups: an experimental group engaged in writing instruction through GBL and a control group receiving traditional writing education. To evaluate the effectiveness of the instructional approaches, both groups underwent pre-tests and post-tests, which measured various dimensions of writing proficiency and creativity prior to and following the instructional phase. Subsequent statistical analyses were conducted to compare the outcomes of the two groups, with the objective of identifying any notable differences in results. The findings indicated that the experimental group, which participated in GBL, exhibited a marked enhancement in both writing skills and creativity relative to the control group that adhered to traditional instructional practices. This finding underscores the significant implications of the research for educational environments, particularly in the realms of language instruction and curriculum development. The findings highlight the novelty of this study in demonstrating how the integration of game-based learning strategies not only enhances student engagement but also introduces a creative pedagogical framework that stimulates students' imaginative thinking in ways that traditional methods may not achieve.
Keywords: Games Based Learning, GBL, Teaching Writing, Students' Creativity, Experimental study

INTRODUCTION

Effective writing skills are crucial not only for achieving academic excellence but also for enhancing various facets of life, such as professional interactions and personal

communication. Febriyanti et al, (2017) assumed that developing proficient writing skills is a crucial component of language learning for students. Proficiency in writing allows students to express their thoughts clearly, construct compelling arguments, and engage in analytical reasoning. Fitria (2024) added that writing presents a significant challenge, and it is a skill that not all students have mastered. Consequently, it is vital for students to cultivate robust writing skills as they advance in their educational journeys. Writing transcends mere handwriting or technical skills; it serves as a vital medium for articulating and understanding students' knowledge.

Historically, writing instruction has often depended on rigid lesson structures and repetitive tasks. Writing constitutes a fundamental skill that students must acquire within educational environments. The development of writing skills is a multifaceted endeavor. Additionally, composing text in English as a foreign language presents significant challenges. This process encompasses the formulation of ideas in written form, utilizing specific structural conventions and linguistic characteristics to fulfill the communicative objectives associated with various genres (Fitriati et al., 2018). Emilia (2021) stated that Writing is a process of meaning-making through text that involves critical thinking, creativity, and awareness of genre and audience. These traditional strategies seek to enhance students' writing capabilities through a disciplined and methodical framework. Nevertheless, the changing educational environment has paved the way for innovative teaching approaches, such as Games Based Learning (GBL). GBL incorporates game-like elements into educational practices, fostering a more engaging and immersive learning atmosphere. Game-Based Learning (GBL) refers to a pedagogical strategy wherein students recognize and engage with game elements pertinent to the specific context established by the instructor. This method of online learning, which incorporates gaming principles, has demonstrated significant effectiveness and is increasingly being adopted in educational environments as a novel instructional approach (Chang et al., 2022). Game-based learning (GBL), as highlighted by Chang et al. (2019), refers to an interactive educational approach that integrates instructional content and learning resources within the framework of digital games. This methodology encompasses activities that enable students to engage in fundamental tasks or adopt comprehensive strategies for addressing problems. Thus, Game-Based Learning (GBL) incorporates aspects of gaming into educational practices, thereby fostering a more engaging and immersive educational experience.

The studies conducted by Hafiza & Pratolo (2024) and Assapun & Thummaphan (2023) emphasizes the advantages of integrating GBL and interactive strategies to cultivate essential skills such as problem-solving and creativity, which are vital for achieving proficiency in English. These insights illustrate the transformative potential of innovative teaching methods in reshaping conventional educational practices and enriching student learning experiences. Recent investigations have demonstrated the efficacy of Game-Based Learning (GBL) in enhancing multiple facets of the educational process. GBL has been found to encourage active engagement, boost retention rates, and elevate student motivation (Pivec et al., 2021). By embedding game elements into educational activities, GBL creates a vibrant and stimulating atmosphere that can significantly improve students' learning experiences. Furthermore, GBL has been acknowledged for its ability to foster critical thinking, problem-solving abilities, collaboration, and creativity—essential elements of proficient writing (Hafiza & Pratolo (2024); Assapun & Thummaphan (2023)). This theoretical framework supports the implementation of interactive and playful learning environments to stimulate creative thought and improve educational outcomes.

Creativity plays a crucial role in the learning process, especially in writing, where the ability to generate novel and original ideas is paramount. A pedagogic mix can purposefully teach children foundational skills and knowledge necessary to perform well on high-stakes writing assessments, along with a sense that writing is meaningful and joyful (Brosseuk, 2024). Prior studies have shown that game-based learning (GBL) can improve language proficiency and writing outcomes by offering contextualized practice and encouraging student independence (Hung et al., 2018). However, there is still a lack of comprehensive understanding regarding the specific effects of GBL on creativity within the writing process.

This study aims to fill the existing gap in the literature by examining the influence of GBL on creativity in writing. Although earlier studies have highlighted the potential of GBL to enhance language skills, its role in fostering creativity during writing has not been extensively investigated. This study intends to explore how GBL affects students' creative capacities and writing performance, thereby providing important insights into the effectiveness of this innovative educational approach.

This study examines whether GBL can significantly improve writing skills and creativity among seventh-grade students in a Writing Class. The hypothesis posits that students who participate in GBL will demonstrate more substantial advancements in both writing performance and creativity compared to their peers who receive traditional instruction. Unlike prior research that focused solely on either GBL or conventional teaching, this study uniquely investigates their comparative impact on students' creative thinking and problem-solving abilities in writing tasks.

METHOD

Research Design

This study employed an experimental research design utilizing a quantitative methodology. Experimental research focuses on examining variables, which are defined as characteristics that can exhibit varying values among individuals or entities. As noted by Zubair (2023 Experimental research is a scientific method in performing research where independent variables are applied to dependent variables to observe their effect on the latter. However, this investigation was classified as quasi-experimental rather than true experimental due to the inability to randomly assign participants to different treatment groups. Instead, pre-existing groups, such as classes, were utilized.

The research involved two distinct groups: an experimental group and a control group. Both groups were instructed on the same lesson topic during the teaching and learning process. The experimental group received instruction through the project-based learning method, while the control group was taught using the direct instruction method. Following the instructional treatment, a post-test was administered to both groups to assess the enhancement of the students' writing skills. The post-test scores served as the data for subsequent analysis.

To evaluate the effects of the experimental variables and to explore the interaction between the different treatments, a Factorial Design was employed. This design facilitates the independent variation of two or more distinct characteristics, treatments, or events within a single study. The research aimed to elucidate and validate the impact of the Project-Based Learning method on writing instruction, particularly in relation to students' creativity.

Research Subject

The study focused on students enrolled in English writing classes in the Institut Prima Bangsa, specifically targeting those participating in the writing curriculum during the academic term in which the research was conducted. To qualify for inclusion in the study, students were required to be actively involved in the English writing program and available for the duration of the research. This selection criterion was established to ensure that the sample accurately reflected the target population and was engaged with the relevant instructional content.

Sampling Method

Given the limitations associated with random assignment of participants to experimental conditions, a quasi-experimental design was employed. This approach is particularly appropriate for educational research where randomization is not feasible. The study utilized existing classes as the sample population. Two classes were chosen: one functioned as the experimental group, which implemented the Project-Based Learning (PBL) approach, while the other acted as the control group, which received instruction through Direct Instruction (DI). The selection of pre-existing groups facilitated a practical implementation of the research design within the established framework of the school.

The instructional materials consisted of a series of writing assignments that were designed to be equivalent in content and difficulty for both groups. These assignments aimed to evaluate the students' writing abilities and were administered according to the respective teaching methodologies. For the experimental group, the Project-Based Learning approach involved engaging students in practical projects that necessitated the application of writing skills within a collaborative setting. Conversely, the control group was subjected to Direct Instruction, which emphasized traditional pedagogical methods focusing on explicit teaching and practice of writing skills.

Software

The post-test scores were subjected to statistical analysis utilizing SPSS Software, which is prevalent in the realm of educational research data analysis. This software facilitated the processing and interpretation of quantitative data, thereby allowing for an assessment of the effectiveness of the instructional methods employed.

RESULTS AND DISCUSSIONS

RESULT

Table 1. Statisctics of Primary Data

Statistics				
		PRETEST	POSTTEST	**A**
N	Valid	15	15	**15**
	Missing	2	2	**2**
Mean		50.3073	89.0909	**1,0000**
Std. Error of Mean		.58455	.70530	**.00000**
Median		50,5000	89,0000	**1,0000**

Mode	52.00	89.00	**1.00**
Std. Deviation	2.74177	3.30813	**.00000**
Variance	7.517	10.944	**.000**
Skewness	.364	.806	
Std. Error of Skewness	.491	.491	**.491**
Kurtosis	.172	2.213	
Std. Error of Kurtosis	.953	.953	**.953**
Range	11.00	15.00	**.00**
Minimum	46.00	82.00	**1.00**
Maximum	57.00	97.00	**1.00**
Sum	**1105.00**	**1960.00**	**30.00**

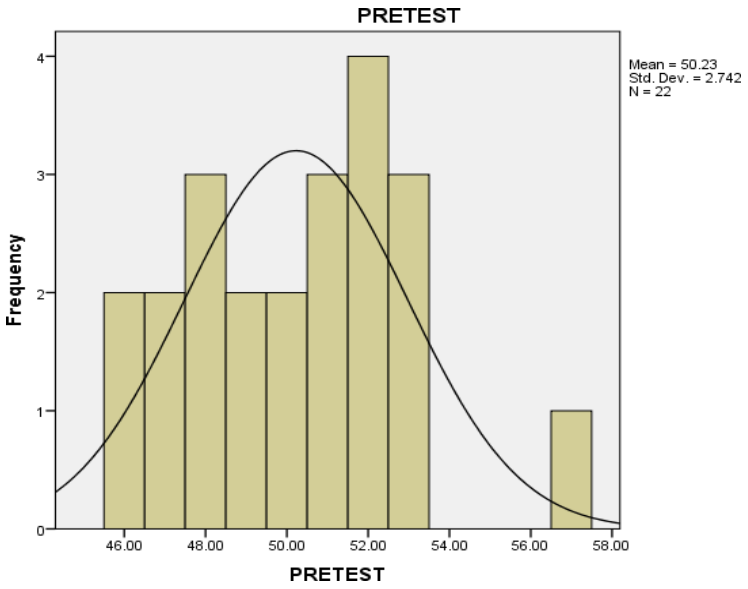

Figure 1. Control Class Description

The control group comprised 30 individuals who completed the pretest. Statistical analysis revealed that the average (mean) pretest score was 50.3073, accompanied by a standard deviation of 2.74177. The lowest score recorded among participants was 46, while the highest was 57, resulting in a score range of 11. The median score for the pretest was 50.5, and the mode was identified as 52. Furthermore, the data indicated a skewness of 0.364, suggesting a slight rightward skew in the score distribution. The kurtosis value of 0.172 also pointed to a distribution that approximates normality. In the frequency analysis, the distribution of scores was as follows: 1 participant scored 57, 3 participants scored 53, 4 participants scored 52, 3 participants scored 51, 2 participants scored 50, and 2 participants scored 49. The observed skewness of 0.364 and kurtosis of 0.172 further confirm that the pretest score distribution exhibits a minor skew and is nearly normal.

From this description, we can understand that the control class pretest scores are spread fairly evenly with variations that are not too large.

Table 2. Description of Experimental Class

Statistics				
		PRETEST	POSTTEST	**A**
N	Valid	18	18	**18**
	Missing	2	2	**2**
Mean		50.3073	89.0909	**1,0000**
Std. Error of Mean		.58455	.70530	**.00000**
Median		50,5000	89,0000	**1,0000**
Mode		52.00	89.00	**1.00**
Std. Deviation		2.74177	3.30813	**.00000**
Variance		7.517	10.944	**.000**
Skewness		.364	.806	
Std. Error of Skewness		.491	.491	**.491**
Kurtosis		.172	2.213	
Std. Error of Kurtosis		.953	.953	**.953**
Range		11.00	15.00	**.00**
Minimum		46.00	82.00	**1.00**
Maximum		57.00	97.00	**1.00**
Sum		**1105.00**	**1960.00**	**30.00**

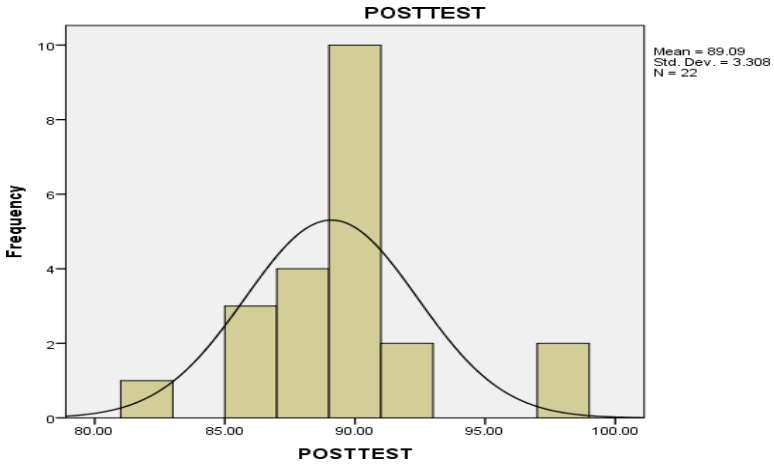

Figure 2. Experimental Class Description

The experimental group comprised 18 participants who completed the posttest. The mean posttest score was calculated to be 89.0909, accompanied by a standard deviation of 3.30813. Participants achieved a minimum score of 82 and a maximum score of 97, resulting in a score range of 15. The median score was 89, and the mode was also 89, reflecting a high degree of score consistency around the mean. The statistical analysis revealed a skewness of 0.806, indicating a rightward skew in the distribution of scores. Furthermore, the kurtosis of the posttest scores was measured at 2.213, suggesting a distribution that is more peaked than that of a normal distribution. In the frequency analysis, the distribution of scores was as follows: 2 participants scored 97, 1 participant scored 92, 1 participant scored 91, 3 participants scored 90, 7 participants scored 89, 2 participants scored 88, and 2 participants scored 87. The observed skewness of 0.806 and kurtosis of 2.213 imply that the posttest scores are concentrated around the higher scores, exhibiting a sharper distribution. This indicates that the participants in the experimental class demonstrated improved and more consistent performance following the intervention.

Table 3. Independent Sample T-test

		Levene's Test for Equality of Variances		**t-test for Equality of Means**	
		F	Sig.	t	**df**
HASIL	Equal variances assumed	.027	.869	-42.425	**42**
	Equal variances not assumed			**-42.425**	**40.601**

An independent sample T test was conducted to assess the differences in average result values (RESULTS) between the control group and the experimental group. The findings indicate a statistically significant disparity between the two groups. Levene's test confirmed that the variances across groups are homogeneous (F = 0.027, Sig. = 0.869). The T test yielded a t-value of -42.425 with 42 degrees of freedom and a significance level of 0.000, indicating a highly significant difference in average result values. The control group had an average result value of 50.3073, whereas the experimental group had an average of 89.0909. The average difference of -38.86364 is substantial, with a 95% confidence interval ranging from -40.71309 to -37.01498. These findings suggest that the intervention implemented in the experimental group had a considerable and significant effect on the outcome scores of the participants when compared to the control group.

Table 4. Paired-Samples T-test

		Paired Differences			
		Mean	Std. Deviation	Std. Error Mean	**95% Confidence Interval of the Difference**
					Lower
Pair 1	**PRETEST - POSTTEST**	**-38.86364**	**4.63214**	**.98758**	**-40.91741**

Paired sample T tests were conducted to compare pretest and posttest scores from the same participants. The test results show that there is a significant difference between the pretest and posttest scores. The average pretest score is 50.3073 with a standard deviation of

2.74177, while the average posttest score is 89.0909 with a standard deviation of 3.30813. The pair correlation test shows a correlation of -0.165 with a significance of 0.463, indicating that there is no significant correlation between the pretest and posttest scores. The paired T test shows t = -39.353 with df = 21, and a significance of 0.000, which means the difference between the pretest and posttest averages is very significant. The mean difference is - 38.86364 with a 95% confidence interval between -40.91741 to -36.80986. These results indicate that the intervention provided had a significant impact on increasing participants' scores from pretest to posttest.

The results of this study show that the intervention given in the experimental class had a significant and positive impact on increasing the participants' results. The control class shows a normal and even distribution of values, while the experimental class shows a significant increase in values with a more centered and non-normal distribution of values. The homogeneity of variance test shows that the two groups have the same variance, which supports a valid comparative analysis. The T test showed a significant difference between the results scores of the two groups, as well as a significant increase in participants' results scores from pretest to posttest. These results support the hypothesis that the educational intervention provided was effective in improving participants' abilities, and can be used as a basis for implementing similar interventions in the future.

DISCUSSION

The Effectiveness of Game-Based Learning (GBL) in Writing Class

Creativity is essential competencies in today's workforce, empowering individuals to develop original ideas, discover new solutions, and adapt to an ever-changing environment. Game-based learning serves as a powerful tool for cultivating these skills by engaging students in open-ended tasks that promote experimentation, exploration, and the willingness to take risks (Teichmann et al., 2020). Educators who incorporate game elements that foster creative thinking and problem-solving create environments that support the development of creativity and innovation. In addition, the significance of adapting GBL strategies to individual learner profiles to maximize educational effectiveness as educators who use GBL specifically suited to their teaching environments can foster highly pertinent and captivating educational experiences as higlighted by Chang and Yang (2023) and Martin-Hernandez et al. (2021). Game-based learning, aimed at addressing challenges and enhancing problem-solving capabilities, has proven effective in fostering creativity and playfulness among young learners. This approach positively impacts the educational experience and can expedite the learning process for children developing their problem-solving skills (Behnamnia et al., 2020).Therefore, this way to use GBL allows students to participate in activities that encourage the generation of ideas, evaluation of alternative strategies, and implementation of innovative techniques.

The previous studies indicates that games possess characteristics that can enhance student learning. These include the provision of challenging experiences that foster intrinsic motivation and create avenues for genuine learning (Li, 2018; Jaaska et al, 2022). Additionally, games allow learners to navigate their surroundings without the fear of failure (Aldrich, 2005). Moreover, they have been shown to boost personal satisfaction and contribute to improved performance outcomes (Lampropoulos & Sidiropoulos, 2024).

It is essential to recognize that the success of games-based learning is significantly influenced by the manner in which these games are integrated into the classroom

environment. Employing games as an educational strategy in the instruction of English can enhance both the pedagogical approach and the learning experience for students as articulated by Olayvar, 2023. Mao and Lee (2024) developed an educational framework that incorporated collaborative game-based learning.

Relating to the study by Hafiza and Pratolo (2024), the application of game-based learning (GBL) in English education can improve students' vocabulary and their ability to use a diverse array of words in their written English. The study conducted by Dirwan et al., (2022) demonstrated that participation in gaming activities improved students' comprehension of grammatical tenses. Furthermore, involvement in extracurricular gaming outside the classroom contributes to the enhancement of students' writing abilities by promoting the use of more complex grammatical structures.

It is proven that game-based learning methods in the acquisition of English language skills has been well established. This study proves to be particularly beneficial for both educators and students engaged in the process of teaching and learning English. The implementation of such methods significantly influences students' experiences during their educational journey, fostering a comfortable learning environment, enhancing enjoyment, increasing student engagement, especially in writing class. Consequently, it is essential for teachers to continually enhance their proficiency in utilizing educational technology. Furthermore, educators must exercise discernment in selecting appropriate games for the teaching and learning process, ensuring a diverse array of game options to maintain student enthusiasm and engagement.

CONCLUSION

This study examined the efficacy of game-based learning strategies in enhancing writing skills among students enrolled in writing classes at the Institut Prima Bangsa, with a particular emphasis on the influence of these methods on student creativity. The study assessed the application of various educational games as pedagogical tools to evaluate their potential in improving writing abilities and fostering creative development among learners.

The findings indicate that game-based learning significantly enhances students' writing skills. Appropriately designed and contextually relevant games can cultivate an interactive and enjoyable educational atmosphere, thereby increasing students' motivation to engage actively in the learning process. In this regard, games function not merely as entertainment but as effective instruments for imparting writing concepts and techniques in a more comprehensive and practical manner.

A key outcome of the research is that the integration of games into writing instruction can lead to a deeper understanding of text structure, vocabulary, and syntactic proficiency. Students participating in game-oriented activities demonstrated marked improvements in organizing their ideas, structuring their thoughts, and expressing themselves more creatively in writing. Games specifically crafted to ignite students' imagination and creativity can alleviate feelings of monotony and pressure often associated with writing tasks.

From a creativity standpoint, game-based learning has been found to enhance students' capacity for creative thinking and idea generation. Games that incorporate elements of competition, collaboration, and exploration enable students to experiment with diverse writing styles and techniques. The creativity nurtured through these games also plays a significant role in elevating the quality of students' writing, as they are more inclined to produce original and innovative compositions.

Games should be crafted with explicit learning objectives that correspond with the established curriculum. Furthermore, effective teaching strategies, including constructive feedback and continuous support, are vital in enabling students to fully leverage the advantages of this educational approach. The research also highlighted several obstacles that may arise during the implementation of games-based learning. One notable challenge is the necessity for the games to be not only enjoyable but also pertinent and effective in meeting educational goals. Constraints related to time and resources within the classroom can hinder the design and execution of high-quality games. Consequently, meticulous planning and preparation of games, along with adequate training for educators, are crucial to optimize the effectiveness of this method. In summary, the findings of this research affirm that games-based learning serves as an effective strategy for teaching writing skills and fostering student creativity in writing classes. This method not only enhances the engagement and enjoyment of the learning experience but also contributes to the development of superior and more innovative writing abilities. This study presents a novel framework for incorporating educational games into writing curricula, emphasizing the need for future research to tailor game designs to diverse classroom settings and learner profiles. Thoughtful implementation and thorough reflection on these practices can ensure that the advantages of games-based learning are fully realized and effectively utilized in different educational environments.

REFERENCES

Assapun, S., & Thummaphan, P. (2023). Assessing the effectiveness of board game-based learning for enhancing problem-solving competency of lower secondary students. International Journal of Instruction, 16(2), 511-532.

Behnamnia, N., Kamsin, A., Ismail, M. A., & Hayati, A. (2020). The effective components of creativity in digital game-based learning among young children: A case study. Children and Youth Services Review, 116, https://doi.org/10.1016/j.childyouth.2020.105227

Brosseuk, D. (2024). Mixing pedagogies to cultivate joyful and creative young writers in an era of standardised writing tests. *Early Childhood Education Journal*, 1-13.

Chang, C.-Y., & Hwang, G.-J. (2019). Trends in digital game-based learning in the mobile era: a systematic review of journal publications from 2007 to 2016. In Int. J. Mobile Learning and Organisation (Vol. 13).

Chang, C. Y., Chung, M. H., & Yang, J. C. (2022). Facilitating nursing students' skill training in distance education via online game-based learning with the watch-summarizequestion approach during the COVID-19 pandemic: A quasi-experimental study. Nurse Education Today, 109. https://doi.org/10.1016/j.nedt.2021.105256

Chang, C. C., & Yang, S. T. (2023). Interactive effects of scaffolding digital game-based learning and cognitive style on adult learners' emotion, cognitive load and learning performance. *International Journal of Educational Technology in Higher Education*, *20*(1), 16.

Emilia, E. (2021). Pendekatan Genre dalam Pembelajaran Bahasa Inggris. Bandung: Rizqi Press.

Febriyanti, A. L., Harsiati, T., & Dermawan, T. (2017). Pengembangan Instrumen Asesmen Menulis Kreatif Cerita Fantasi Untuk Siswa Kelas VII SMP. Jurnal Pendidikan:

Teori, Penelitian, dan Pengembangan, 2(10), 1399–1408. http://journal.um.ac.id/index.php/jptpp/article/view/10105

Fitriati, S. W., Solihah, Y. A., & Tusino. (2018). Expressions of attitudes in students' narrative writing: An appraisal analysis. Lingua Cultura, 12(4), 333-338. https://doi.org/10.21512/lc.v12i4.4789

Fitria, T. N. (2024). Creative Writing Skills in English: Developing Student's Potential and Creativity. EBONY: Journal of English Language Teaching, Linguistics, and Literature, 4(1), 1–17. https://doi.org/10.37304/ebony.v4i1.10908

Hafiza, A.F., & Pratolo, B.W. (2024). A systematic review of the effectiveness of game-based learning in English language teaching, International Journal of Education and Learning, 6 (2), 56-64, http://dx.doi.org/10.31763/ijele.v6i2.1312

Hung, C. M., Yang, M. H., Hwang, G. J., Chu, H. C., & Wang, C. C. (2018). A scoping review of research on digital game-based language learning. Educational Technology & Society, 21(4), 74-87.

Jääskä, E., Lehtinen, J., Kujala, J., & Kauppila, O. (2022). Game-based learning and students' motivation in project management education. Project Leadership and Society, 3, 100055.

Lampropoulos, G., & Sidiropoulos, A. (2024). Impact of gamification on students' learning outcomes and academic performance: A longitudinal study comparing online, traditional, and gamified learning. *Education Sciences*, *14*(4), 367.

Li, L. (2018). Using game-based training to improve students' assessment skills and intrinsic motivation in peer assessment. Innovations in Education and Teaching International, 56(4), 423–433.

Mao, J., & Lee, M. (2024). Level-Up Learning with CIGLE Framework: Enhancing Learning Through Interactive, Game-Based Collaboration for Effective Problem Solving. International Journal of Technology and Engineering Studies, 10(1), 1–15. https://doi.org/10.20469/ijtes.10.10001-0

Martin-Hernandez, P., Gil-Lacruz, M., Gil-Lacruz, A., Azkue-Beteta, J.L., Lira, E.M., Canterero, L. (2021). Fostering University Students' Engagement in Teamwork and Innovation Behaviors through Game-Based Learning (GBL). Sustainability, 13(24), 13573, https://doi.org/10.3390/su132413573

Olayvar, S. R. (2023). Integration of game-based learning approach as an innovative teaching tool in improving students' academic performance in English. International Journal of Instruction, 16(3), 677-690. https://doi.org/10.29333/iji.2023.16336a

Teichmann, M., Ullrich, A., Knost, D., & Gronau, N. (2020). Serious games in learning factories: perpetuating knowledge in learning loops by game-based learning. Procedia Manufacturing, 45, 259-264.

Zubair, A. M. (2023). Experimental Research Design-types & process. *Academia Open*.