

THE EFFECTIVENESS OF THE PROJECT-BASED LEARNING MODEL ASSISTED BY INSTAGRAM MEDIA TO IMPROVE POETRY WRITING SKILLS

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Abstrak

Perkembangan teknologi digital dan media sosial telah mengubah cara generasi muda belajar, termasuk dalam pembelajaran sastra. Instagram yang populer di kalangan pelajar berpotensi mendukung penerapan Project Based Learning (PjBL) untuk meningkatkan keterampilan menulis puisi sekaligus mendorong keterlibatan aktif siswa. Penelitian ini bertujuan untuk menganalisis pengaruh penerapan PjBL berbantuan Instagram terhadap keterampilan menulis puisi siswa SMP dengan menggunakan metode eksperimen semu berdesain nonequivalent control group. Sampel terdiri atas 80 siswa kelas VIII SMP Negeri 5 Cimahi yang terbagi menjadi kelompok eksperimen yang mendapatkan pembelajaran PjBL berbasis Instagram dan kelompok kontrol yang menerima pembelajaran konvensional. Instrumen penelitian berupa tes menulis puisi yang telah melalui uji validitas dan reliabilitas, sedangkan analisis data dilakukan dengan uji-t sampel independen dan perhitungan effect size. Hasil penelitian menunjukkan rata-rata nilai posttest kelompok eksperimen (63,83) lebih tinggi dibandingkan kelompok kontrol (59,92) namun perbedaan tersebut tidak signifikan secara statistik ($p = 0,187$). Nilai effect size (Cohen's $d = 0,298$) menunjukkan pengaruh kecil tetapi positif. Penggunaan Instagram terbukti mampu meningkatkan partisipasi, kreativitas, dan kepercayaan diri siswa, serta memiliki potensi sebagai media pembelajaran sastra yang relevan dengan karakteristik generasi Z meskipun penerapannya memerlukan perencanaan yang lebih terstruktur dan berkelanjutan untuk hasil yang lebih optimal.

Kata Kunci: *instagram, project based learning, menulis puisi, media digital*

Abstract

The development of digital technology and social media has transformed the way young people learn, including in the context of literature education. Instagram, which is popular among students, has the potential to support the implementation of Project Based Learning (PjBL) to enhance poetry writing skills while fostering active student engagement. This study aims to analyze the effect of implementing Instagram-assisted PjBL on junior high school students' poetry writing skills using a quasi-experimental method with a nonequivalent control group design. The sample consisted of 80 eighth-grade students of SMP Negeri 5 Cimahi, divided into an experimental group that received Instagram-based PjBL learning and a control group that received conventional instruction. The research instrument was a poetry writing test that had been validated and tested for reliability, while data analysis was carried out using an independent sample t-test and effect size calculation. The results showed that the experimental group's average posttest score (63.83) was higher than that of the control group (59.92), although the difference was not statistically significant ($p = 0.187$). The effect size (Cohen's $d = 0.298$) indicated a small but positive influence. The use of Instagram was found to increase student participation, creativity, and self-confidence, and has the potential to serve as a literature learning medium relevant to the characteristics of Generation Z, although its implementation requires more structured and sustainable planning to achieve optimal results.

Keywords: *instagram, project-based learning, poetry writing, digital media*

1. INTRODUCTION

Indonesian is taught with an emphasis on mastering four core language skills, which serve as the foundation of students' language abilities: listening, speaking, reading, and writing. These four skills are closely related and inseparable because they serve as the primary means of communication. Writing is often viewed as the most challenging of all skills. This view aligns with, who assert that writing is a complex skill that involves the ability to organize and convey ideas systematically.

Writing, including poetry, is an essential skill for every student. The ability to create poetry plays a significant role in developing both language skills and student creativity, particularly at the elementary and secondary levels. As a form of literature, poetry provides students with the opportunity to express their ideas and feelings through beautiful and imaginative language. Writing poetry in education has been shown to hone critical thinking skills, enhance creativity, and foster emotional sensitivity. However, students face significant challenges in creatively expressing their ideas through poetry. This is influenced by limited mastery of basic techniques, limited sources of inspiration, and limited opportunities for independent creativity.

Low interest in reading also exacerbates the situation, leaving students with a lack of resources to develop writing ideas. Other factors such as low motivation, monotonous learning methods, and minimal integration of digital technology into learning also contribute significantly.

The writing learning process tends to focus on theory without sufficient space for practice, thus depriving students of adequate hands-on experience. A creative and contextually appropriate learning approach is needed to enable students to express their creative ideas in the form of poetry. An appropriate and suitable learning method to overcome this obstacle is to implement

a project-based learning model, known as Project-Based Learning. Learning (PjBL). Based on the results of previous research (Mahirah & Widyartono, 2024), it shows that the integration of technology and innovation in learning can create meaningful learning experiences. PjBL emphasizes student activeness in completing contextual and applicable projects. The use of the Instagram platform, which has now become an integral part of students' daily lives, has the potential to make learning more interesting and meaningful. This view is supported by (Rokhayah, 2022) who stated that PjBL provides opportunities for students to actively design, implement, and present learning projects. In learning to write poetry, this approach can encourage students to explore inspiration from personal experiences, the environment, and literary works they encounter.

Preliminary research indicates that teachers who implement PjBL in poetry learning consider this method effective in improving students' writing skills and creativity. The potential of PjBL to optimize Indonesian language learning, particularly poetry writing, aligns with findings (Wikanengsih & Suhara, 2021) that suggest this method can prevent students from learning boredom. Technological developments open up opportunities to utilize social media such as Instagram as a learning innovation. Instagram can be used to publish poetry and serve as a source of inspiration thanks to features that facilitate visual, audio, and creative interaction exploration. However, the use of this media requires clear guidelines to maintain focus and learning objectives. This study was designed to develop an Instagram-based PjBL model that is expected to develop poetry writing skills and creativity in eighth-grade junior high school students, while also identifying its effectiveness and challenges in implementation.

Research findings from (Aswan et al., 2019) indicate that using Instagram in poetry learning can increase students' interest, self-confidence,

and creativity. (Ulfah et al., 2023) also emphasize the importance of utilizing digital learning media to achieve optimal learning outcomes. This is reinforced by, which shows that Instagram has a positive influence on student learning activities. However, several previous studies related to poetry writing learning through PjBL have not fully utilized digital technology. Instagram, for example, is often used only as a medium for documentation or publication of final works, rather than as an active pedagogical tool. Furthermore, the assessment methods used are often not aligned with the assessment principles of the Independent Curriculum, which emphasizes the process of reflection and strengthening students' learning character. As a result, learning becomes less contextual, collaborative, and appropriate to the digital world in which students live.

This gap prompted this research to develop an Instagram-based PjBL model, where social media functions as an active tool in learning poetry writing. Instagram is utilized not only for publication, but also as a source of inspiration, a medium for collaboration, and a space for creative exploration that supports students' digital literacy. This research emphasizes the importance of developing students' digital identities as aspiring writers and implementing assessments aligned with the Independent Curriculum. This approach is expected to produce a relevant, creative learning experience that will positively impact the development of junior high school students' poetry writing skills. This research focuses on developing and evaluating the effectiveness of this learning model.

2. METHOD

This research applies a quasi-experimental method with a Nonequivalent design. Control Group Design involving two eighth grade classes at SMP Negeri 5 Cimahi in the even semester of the 2024/2025 academic year. The population that became the object of the study included all

eighth grade students of SMP Negeri 5 Cimahi, totaling 240 students divided into eight classes. The research sample was determined using a purposive sampling technique based on the equality of academic characteristics and the level of student learning activities. The sample consisted of Class VIII-A designated as the experimental group with a total of 40 students, while Class VIII-B acted as the control group which also consisted of 40 students.

The experimental group received intervention through the implementation of a Project-Based Learning model supported by Instagram, while the control group underwent conventional poetry writing instruction. The study lasted one month and included three stages: a pretest, treatment, and posttest, to evaluate students' poetry writing skills and creativity.

The research data includes both numerical and descriptive data. Numerical data were obtained through poetry writing tests and student creativity questionnaires, while descriptive data were collected through observations of learning activities and documentation of the learning process. (Irfana et al., 2022). All research instruments have been validated by experts before use.

The general format of research design is as follows:

Table 1. Quasi-Experimental Design

Group	<i>Pretest</i> (O1)	<i>Treatment</i> (X)	<i>Posttest</i> (O2)
Experiment	O1	PjBL assisted by Instagram	O2
Control	O1	Conventional learning	O2

Information:

O1 : *Pretest* of poetry writing skills

X : Treatment (*PjBL* with the help of Instagram)

O2 : *Posttest* of poetry writing skills

To measure the effectiveness of the learning model, both groups were given *pretests* and *posttests* on poetry writing skills. In addition, learning observations were conducted, student creativity questionnaires were administered, and

teacher and student responses were collected regarding the learning implementation.

The choice of this quasi-experimental design was considered because the classroom conditions at school do not allow for pure random sampling (*true random sampling*). *randomization*), but this design still allows for control and comparison of the effects of treatments.

Data were collected in two stages, *a pretest* and *a posttest*, for each group. A poetry writing test and a creativity questionnaire were administered before and after the treatment. The experimental group participated in poetry writing lessons using Instagram for four sessions, while the control group received poetry writing lessons using traditional methods without using Instagram.

The validity of the instrument was tested using Pearson *Product correlation. Moment*, while reliability is measured using *the Cronbach's method Alpha*. Quantitative data were analyzed using descriptive and inferential statistics, with the t-test used to test for significant differences between the two groups. Prior to inferential analysis, normality and homogeneity tests were performed as prerequisites for parametric analysis. Meanwhile, qualitative data were analyzed descriptively to strengthen the findings from the quantitative data.

3. RESULTS AND DISCUSSION

Based on the analysis of the validity test results for 30 questions on the instrument administered to 20 students outside the experimental and control classes, the results showed that of the 30 questions analyzed, only a few items had a high and significant correlation with the total score.

The following is a table of validity and reliability.

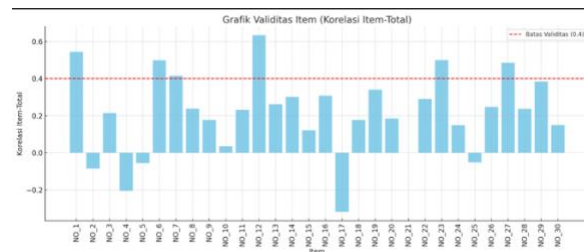


Figure 1. Test of Instrument Validity of Questions

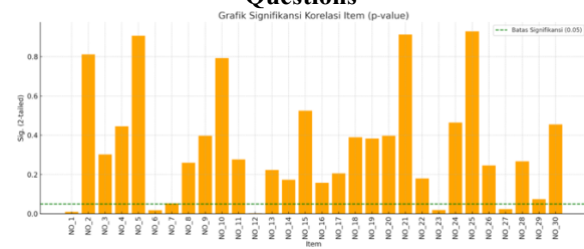


Figure 2. Significance of Item Correlation

Based on the results of the item-total correlation test, it was found that only a small portion of the instrument items met the empirical validity criteria, namely having a correlation value of ≥ 0.40 and significant at the 5% level. This indicates that many of the items were not able to optimally measure the constructs being studied. Furthermore, the reliability test showed that *the Cronbach's α value Alpha*. The obtained value was 0.572, indicating that the instrument's internal consistency level was still relatively low. This finding reinforces the importance of improving the item wording and indicator mapping before the instrument is used on a broader scale. Therefore, revisions were made to problematic items, both in terms of content, sentence structure, and indicator suitability.

Results of Students' Initial Ability in Writing Poetry Texts

Based on the test results in the experimental class and the control class, the results of students' initial ability to write poetry texts were obtained with the following data:

Table 1 Average Results of Pretest Scores for Experimental Class and Control Class

Class	Mark	
	Experimental Class	Control class
N	40	40
Mean	543,340	436,660
Standard Deviation	1,137,773	1,042,676
Std. Error Mean	179,898	164,862

Based on the average *pretest scores*, it appears that students in the experimental class had higher initial scores than those in the control class. Their average score was 54.33, while students in the control class recorded an average score of 43.67. Although the two groups had not received different learning treatments, this nearly 11-point difference indicates that there was an initial disparity in material mastery or learning readiness between the two groups. This is reflected in the relatively similar standard deviation values, which were around 11.38 for the experimental class and 10.43 for the control class, indicating that the distribution of scores among students was within a comparable range.

Then the data is tested for normality. as a requirement for parametric testing. The following are the results of data processing:

Table 2 Tests of Normality

Class	Statistic	Mark	
		Experimental Class	Control class
Kolmogorov-Smirnov ^a	Statistic	.156	.162
	Df	40	40
	Sig.	.015	.009
Shapiro-Wilk	Statistic	.957	.961
	df	40	40
	Sig.	.130	.187

The results of the normality test show that the *pretest scores* for the experimental and control classes have significant values obtained from the *Shapiro-Wilk test*. The significance value obtained for the experimental class is 0.139, while for the control class it is 0.187. Considering

that both values are greater than 0.05, it can be generally concluded that the data in both classes meet the assumption of normality.

Table 3 Independent Sample Test

	Equal variances assumed	Equal variances not assumed
F	0,13819444	
Sig. t	0,45625	4.372
df	78	77.413
Sig. (2-tailed)	< 0.001	< 0.001
Mean Difference	1.066.800	1.066.800
Std. Error Difference	244,013	244,013

Samples Results The *t- test* showed that the variances of the two groups were homogeneous ($p = 0.657$), so the analysis used the assumption of equal variances. The *t*-value of 4.372 with $p < 0.001$ indicates a significant difference between the two groups, with a mean difference of 10.67 points. The 95% confidence interval for this difference ranges from 5.81 to 15.53, which is completely above zero.

Table 4. Average Posttest Score Results for Experimental Class and Control Class

Class	Mark	
	Experimental Class	Control Class
N	40	40
Mean	638.333	599.165
Std. Deviation	1.113.402	1.491.567
Std. Error Mean	176.044	235.837

In the next stage, a *t- test* was conducted on the *posttest scores* to assess the effect of the treatment. The results of the *t*-test on the *posttest* showed a significant difference between the experimental and control groups $t(78) = 4.372$, $p = 0.000$), with the average score of the experimental class being significantly higher. This indicates that the initial conditions in the two groups were not equal before the treatment was given. This significant difference in scores was

also reinforced by the very large effect size (*Cohen's d* = 0.978), so it has the potential to be a variable in the *posttest evaluation*.

Table 5 The Results of the Posttest t-test Show the Following Data

		Nilai	
		Equal variances assumed	Equal variances not assumed
F		3.342	
Sig.		.071	
t		1.331	1.331
Df		78	72.165
Sig. (2-tailed)		.187	.187
Mean Difference		391.675	391.675
Std. Error Difference		294.297	294.297
95% Confidence Interval of the Difference	Lower	-194.226	-194.973
	Upper	977.576	978.323

The results of the independent sample t-test showed a t-value of 1.331 with a degree of freedom (df) of 78 and a significance (2-tailed) of 0.187. Because the significance value exceeds 0.05, there is no significant difference between the average of the experimental class and the control class which is not statistically significant. This means that mathematically, the use of a project-based learning model with the help of Instagram has not had a significant impact on the development of students' poetry writing abilities compared to conventional learning.

Table 6. Independent Sample Effect Sizes

		Mark Cohen's d	Hedges' correction	Glass's delta
Standardizer ^a		1.316.138	1.328.964	1.491.567
Point Estimate		.298	.295	.263
95% Confidence Interval	Lower	-.144	-.143	-.181
	Upper	.737	.730	.703

However, the results of the *effect analysis size* with *Cohen's d* of 0.298 shows that the learning model used has a small effect (*small effect size*)

on students' poetry writing skills. This small effect remains significant in the context of education, especially when linked to efforts to create more contextual, creative, and digitally familiar learning environments for students. Although not yet statistically significant, the implementation of the Instagram-based PjBL learning model has a positive impact on improving student learning outcomes.

DISCUSSION

The results of this study show that the use of Instagram in learning to write poetry based on *Project Based Learning* (PjBL) had a positive impact on students' writing skills, although the differences in results did not reach statistical significance. This finding is similar to research conducted by (Qudratunada, 2020) which applied the Experiential Model. Learning using Instagram. This study shows that this social media platform can significantly improve students' poetry writing skills. Similarities can be found in the use of Instagram as a learning medium, while differences lie in the approach used. This study achieved significant improvements, while this study only showed a small effect based on the *effect value. size*.

Research by Sulton (2023) also confirms the potential of Instagram in teaching poetry writing. By developing the M-3 learning model (Imitate, Process, Develop), Sulton found significant improvements in both creativity and stylistic mastery. Similarities with this study are seen in the use of Instagram as a tool to promote writing skills, while differences lie in the learning strategies. The more structured M-3 model produced a stronger impact than the PjBL implemented in this study.

Another relevant study is the study conducted by (Nisa & Ahmadi, 2022) on the application of PjBL in poetry writing learning in junior high schools. Their results showed a significant improvement in students' writing skills, with the majority of students ranked in the good to

excellent category after receiving the treatment. Similarities with this study lie in the application of PjBL in the learning process, while differences lie in the media used. Nisa and Ahmadi's study used PjBL without the aid of social media, while this study combined PjBL with Instagram, which, although having a positive impact, was not statistically significant.

The pedagogical effectiveness of Instagram usage is evident in the increased active participation and emotional engagement of students in the learning process. As a platform familiar to their daily lives, Instagram offers visual, interactive, and publication features that can foster student creativity. According to, by uploading poetry accompanied by illustrations or videos, students are encouraged to combine visual aesthetics and language, thus creating more expressive works. Publishing work on social media also provides opportunities for students to gain appreciation from their peers, which in turn increases self-confidence and artistic responsibility.

These findings align with research (Aswan et al., 2019) showing that Instagram use can enhance students' interest, creativity, and writing skills. Therefore, although quantitatively, it has not produced significant differences, Instagram use remains qualitatively effective in creating more contextual learning, relevant to students' digital culture, and supporting the development of creative literary skills.

The results of this study have generally answered the research questions posed, namely testing the influence of the *Project Based model. Learning* Instagram -assisted learning on students' poetry writing skills. Based on quantitative data, the experimental group achieved a higher average posttest score than the control group, with the effect size, although small, still indicating a positive trend. This finding aligns with Thomas (2000) who asserted that PjBL can improve student engagement and learning outcomes through real-life project-based

learning experiences. Support for the importance of social media in learning is also provided by, who found that social media integration can strengthen academic interactions while improving student academic performance. Furthermore, research by Greenhow & Lewin (2016) emphasized that digital platforms like Instagram can provide a space for students to express themselves creatively, collaborate, and build new literacies relevant to their world. Viewed from the context of writing learning, (Warschauer, 2010) also emphasized that the use of digital technology can improve both motivation and the quality of students' writing. Thus, although statistical significance has not been achieved, the findings of this study still show relevance to the expert view that the use of PjBL combined with social media has the potential to improve the quality of student learning outcomes.

The research hypothesis states that PjBL The positive effect of Instagram- assisted learning on poetry writing skills can be said to be partially supported. This indicates an increase in learning outcomes that are practically relevant, although not yet mathematically significant. As stated by (Kokotsaki et al., 2016), the success of Project-Based Learning (PjBL) is influenced by the complexity of the learning design, the length of the intervention, and the active involvement of students throughout the process. On the other hand, the diversity of students' initial abilities is also an important factor, because according to (Lee et al., 2019), students' responses to project-based learning can vary depending on their background knowledge and skills from the start. In addition, the assessment aspect plays an important role, as emphasized by, that the quality of the evaluation instrument will determine the accuracy of the interpretation of learning outcomes, especially when assessing productive skills such as writing. Thus, although the findings of this study are not yet statistically significant, the positive trend still strengthens that the

combination of Project-Based Learning (PjBL) with social media has the potential to provide benefits for improving students' writing skills.

These findings have direct implications for the development of Indonesian language curriculum and learning strategies, particularly in literature learning. According to (Hidayat & Pramudiani, 2020), teachers need to view Instagram not merely as a social media platform for entertainment, but as a learning medium that can facilitate creative expression, improve visual literacy, and motivate students to create. By integrating Instagram into the PjBL model, teachers can create a collaborative, free, and authentic learning space, while expanding students' sources of creative inspiration through digital networks.

This research strengthens the theoretical foundation regarding the use of digital media in literature learning while also emphasizing its relevance for Generation Z, who grew up in a digital cultural ecosystem. As stated by, the digital native generation requires learning models that are close to their daily experiences, including the use of social media as a means of expression and creativity. In the context of social media-based learning, (Greenhow & Lewin, 2016) explain that digital platforms can expand learning spaces while enabling students to develop creativity and literacy. To maximize the potential of Instagram, teachers need to adopt systematic and sustainable pedagogical strategies. This is in line with the opinion of (Redecker, 2020) who emphasizes the importance of integrating digital technology with innovative pedagogical approaches, such as long-term project-based learning, intensive creative process guidance, and formative evaluation that focuses on both the process and the product of student work.

4. CONCLUSION

Implementation of the *Project Based model Learning* combined with the use of Instagram has been shown to have a positive impact on poetry

writing instruction at the junior high school level. This social media platform not only increases student participation and engagement but also fosters creativity, self-confidence, and responsibility for the literary works they produce. Instagram's visual and interactive features provide a more contextual learning experience and are in line with Generation Z's digital culture, thus supporting the development of students' creative literacy within the context of literature learning.

This research is limited by its relatively short duration and the lack of a more comprehensive evaluation strategy to measure the sustainability of the learning impact. Nevertheless, this study contributes to providing an alternative, innovative literature learning strategy through the integration of digital technology. These findings are expected to form the basis for further research with more structured implementation, longer timeframes, and the support of more comprehensive evaluation instruments to maximize the learning outcomes of poetry writing in the digital age.

REFERENCE

- Al-Bataineh, A., & Anderson, S. (2015). Assessing project-based learning: An investigation of an evaluation rubric. *Journal of Education and Learning*, 4 (4), 27–34. <https://doi.org/10.5539/jel.v4n4p27>
- Aswan, A., Aulia, NL, & Naufalia, A. (2019). Learning to write poetry through social media. *ResearchGate*, 1–8.
- Cahyani, I., & Hodijah, S. (2011). *Indonesian writing skills: Theory and learning*. Yrama Widya.
- Dalman. (2021). *Writing Skills (5th Edition)*. Raja Grafindo.
- Feniliya, F. (2020). The influence of vocabulary mastery and creative thinking skills on the ability to write Indonesian narrative texts. *Discourse: Journal of Indonesian Language Education*, 2 (3), 216–225. <https://doi.org/10.30998/diskursus.v2i03.6701>
- Greenhow, C., & Lewin, C. (2016). Social media and education: Reconceptualizing the boundaries of formal and informal learning. *Learning, Media and Technology*, 41 (1), 6–30.

- https://doi.org/10.1080/17439884.2015.1064954
- Hidayat, R., & Pramudiani, P. (2020). Utilizing Instagram social media in Indonesian language learning. *Journal of Indonesian Language and Literature Education*, 9 (1), 45–56. <https://doi.org/10.23887/jpbi.v9i1.25567>
- Irfana, S., Attalina, SNC, & Widiyono, A. (2022). The effectiveness of the project-based learning (PjBL) model in improving student interest and learning outcomes in elementary schools. *Journal of Professional Elementary Education*, 1 (1), 56–64. <https://doi.org/10.46306/jpee.v1i1.7>
- Junco, R., Heiberger, G., & Loken, E. (2011). The effect of Twitter on college student engagement and grades. *Journal of Computer Assisted Learning*, 27 (2), 119–132. <https://doi.org/10.1111/j.1365-2729.2010.00387.x>
- Kokotsaki, D., Menzies, V., & Wiggins, A. (2016). Project-based learning: A review of the literature. *Improving Schools*, 19 (3), 267–277. <https://doi.org/10.1177/1365480216659733>
- Kosasih, E. (2012). *Appreciation of Indonesian literature: For senior high school/vocational high school grade X*. Yrama Widya.
- Lee, M., Blackwell, S., Drake, J., & Moran, K. A. (2019). Taking a leap of faith: Redefining teaching and learning in higher education through project-based learning. *Interdisciplinary Journal of Problem-Based Learning*, 13 (2), 1–16. <https://doi.org/10.7771/1541-5015.1801>
- Listiawati, M., Selirowangi, NB, & Lestari, LT (2017). The effect of using Instagram media with the Quantum Teaching model on the poetry writing ability of class X students of SMK Hasyim Asy'ari Pucuk Lamongan. *Edu-Kata*, 5 (1), 205–210. <https://doi.org/10.52166/kata.v4i1.1633>
- Mahirah, KH, & Widyartono, D. (2024). Implementation of innovative learning through the snakes and ladders game as a means of writing poetry in junior high schools. *JoLLA: Journal of Language, Literature and Arts*, 4 (2), 130–136. <https://doi.org/10.17977/um064v4i22024p130-136>
- Nisa, AH, & Ahmadi, A. (2022). Application of Project Based Learning (PjBL) in teaching poetry writing in junior high school. *Basastra Journal*, 11 (1), 1–10. <https://doi.org/10.20961/basastra>
- Nurhadiyati, A., Rusdinal, R., & Fitria, Y. (2020). The influence of the project-based learning (PjBL) model on student learning outcomes in elementary schools. *Basicedu Journal*, 5 (1), 327–333. <https://doi.org/10.31004/basicedu.v5i1.684>
- Prensky, M. (2012). *From digital natives to digital wisdom: Hopeful essays for 21st century learning*. Corwin Press.
- Qudratunada, HL (2020). *The Effect of the Experiential Learning Model Assisted by Instagram Media on High School Students' Poetry Writing Ability* [UPI Repository]. <https://repository.upi.edu/50298>
- Redecker, C. (2020). *European framework for the digital competence of educators: DigCompEdu*. Publications Office of the European Union. <https://doi.org/10.2760/178382>
- Rokhayah, S. (2022). Development of a poetry writing learning module based on project-based learning. *Alinea: Journal of Language, Literature, and Teaching*, 11 (1), 56–66. <https://doi.org/10.35194/alinea.v11i1.1871>
- Sugiyono. (2013). *Educational research methods: Quantitative, qualitative, and R&D approaches*. Alfabeta.
- Sulton, M. (2023). *Development of the M-3 (Imitate–Process–Develop) learning model assisted by the Instagram application for poetry writing learning in high school* [UPI Repository]. <https://repository.upi.edu/103182>
- Thomas, J. W. (2000). *A review of research on project-based learning*. The Autodesk Foundation. http://www.bie.org/index.php/site/RE/pbl_research/29
- Ulfah, A., Fitriyah, L., Zumaisaroh, N., & Jesica, E. (2023). Utilization of digital learning media in poetry writing learning in the Merdeka Belajar era. *Ghancaran: Journal of Indonesian Language and Literature Education*, 5 (1), 42–57. <https://doi.org/10.19105/ghancaran.v5i1.7914>
- Warschauer, M. (2010). Inviting change: Writing, technology, and students' lives. *Language Arts*,

87 (4), 305–313.

Wicaksono, A. (2014). *Creative literary writing and several learning models (1st ed.)*. Garudhawaca.

Wikanengsih, W., & Suhara, AM (2021). Learning to write poetry using the project-based learning method assisted by audiovisual media. *Journal of Indonesian Language and Literature Education*, 4 (1), 101–108.