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# The Effect of Project Based Learning Model Assisted by Learning Management System on Biography Text Writing Skills of Grade X High School

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**A B S T R A C T**

This study aims to evaluate the influence of the project-based learning (PjBL) model supported by the learning management system (LMS) on the writing skills of biographical texts of high school students in class X in Kelapa Gading, North Jakarta. LMS-assisted PjBL is expected to replace the monotonous conventional method. The method used is quantitative with a quasi-experimental design, namely pretest-posttest control group design. The results of the study showed that the average score of students reached 87, higher than the pretest, with a completion percentage of 100%. The improvement in the comprehension of biographical texts in the experimental class reached 86.56%, and the score between pretest and posttest increased by 19 points. The hypothesis test with the t-test showed $\alpha < 0.05$, so H1 was accepted, signaling a significant difference between the control and experimental classes. Of the 67 students in the experimental class, 57 students did not complete the pretest, but after treatment, the average post-test score reached 82 with 100% completeness. The normality and homogeneity test showed normal and homogeneous distribution. The final results showed an increase in biographical text writing skills by 62.68% with the application of the LMS-assisted PjBL model.

## 1. Introduction

The use of the teaching model is often used as one of the education systems that is always developed. The development of science through the right teaching model will shape people who think to continue to work and create. The teaching model will support the movement of educational technology advances which are expected to develop along with the ability of students in the world of education (Aji et al., 2024). This is strengthened by the opinion of Helaluddin and Awalludin who say that the rapid development of technology and information, the ability to write seems to have become an important need (arguably a primary need). The openness of mass

media, both print and electronic, is the opening faucet in accommodating every opinion and idea for everyone (Helaluddin & Awalluddin, 2020).

Technology-supported teaching in the world of education is very synergistic with the development of students' ability to understand science. Learning models that are in accordance with technological developments support the Project Based Learning (PjBL) learning model. PjBL is a learning model that uses projects as media. Students explore, assess, interpret, and synthesize information to produce various forms of learning outcomes (Thomas et al., 2000). The PjBL model is not a new concept in the world of education, its essence that emphasizes learning through real experience makes it even more relevant in facing the dynamics of changing times. Activities in learning prioritize the development of students' potential in relation to educators. This can affect the knowledge and ability of students and teachers for self-development. Students who feel bored with the teacher's teaching style and even get sleepy when listening to monotonous lectures prove that they are not interested in the teaching model that we conventionally provide (Adawiyah, 2021). Therefore, a varied teaching model with an LMS-assisted PjBL system is expected to generate student creativity. In addition to generating students' creativity in thinking, this PjBL model has been recognized as effective in improving students' skills in various fields (Faslia et al., 2023). In addition, this learning model that prioritizes students' active involvement in real projects can help improve writing skills with the help of a learning management system. This assistance can be realized in a structured and interactive learning process.

In the era of digital education, today, LMS has supported learning models, but the effectiveness of its use has not developed well. Both teachers and students have used various applications in their learning, but still use conventional methods in teaching their teaching materials. This prompted this study to analyze the use of LMS-assisted PjBL models. LMS as a tool is expected to stimulate students' interest in learning and doing their assignments. In the last twenty years, LMS has experienced a very rapid development. LMS is starting to connect with information, multimedia, and video streaming sites as well as mobile-based LMS along with the development of ICT, especially smartphones (Zulviana et al., 2021 ; Nisak, 2024) . The development of LMS is increasingly used by teachers for the development of teaching with applications. It is hoped that the feedback from the results of the students' work will be done well. Lack of good feedback will lead to the view that the use of an LMS is inappropriate. This happens, like teachers only provide a link to a media application in the form of a video without downloading directly into the program that has been provided.

One of the teaching materials taught is writing skills. The writing skills that are the object of this research will be identified. Writing is the ability to make letters (numbers and so on) with a pen (pencil, chalk, etc.) (KBBI VI, 2016). The ability to write has existed since ancient Egypt. Writing using pictures, for example hieroglyphic writing. Writing comes from the form of the suffix me- which has the root word 'write'. Writing using scripts has been done since 5000 years ago (Fahmi, 2021). Writing has a level of skill in realizing ideas/inspirations that are in the mind. Writing skills are a process skill because almost everyone makes writing, whether

scientific, non-scientific, or just personal notes, rarely do it spontaneously and instantly (Jauhari, 2018).

Writing activities in the world of education are the main thing in applying the knowledge provided from school. Knowledge abilities are channeled through productive cognitive abilities in the process of planning, writing, and evaluation (Masruroh & Imam, 2022). This writing activity requires a fairly strict process in achieving maximum ability. Writing correctly and well is through a good and proper process. Writing can actualize what is in the student's mind so that it can be known more clearly about one's intentions and goals. This writing activity will give rise to students' independence in producing a piece of writing (Artawan et al., 2017). This independent ability will give birth to students' skills with or without the presence of teachers.

Writing is one of the world literacy movements that must be improved in Indonesia. Literacy activities in Indonesia have experienced a significant decline compared to other countries. Indonesia's literacy level in the world according to PISA research is ranked 72 out of 77 countries (Yusmar & Fadilah, 2023). One of the literacy movements is writing. The problem in writing after observation is that pouring ideas and compiling diction when students start writing is the main problem. This is experienced by high school students in particular. Students have difficulty pouring ideas and diction into writing, making writing delayed so that the collection of assignments or projects is not in accordance with the time given by the teacher. Not only the technical collection is problematic, but there are also several problems that occur when the writing does not match the content and diction used. The problem of writing activities is the object of this research.

This study will analyze the LMS-assisted PjBL model in improving biographical text writing skills. In detail, the analysis with the unit of method used is the Integration of LMS-assisted PjBL in writing teaching: The effect of the LMS-assisted PjBL model on the biographical text writing skills of grade X high school students in Kelapa Gading, North Jakarta is the specification of this study. The use of applications in LMS is one of the teaching development technology instruments for teachers that is expected to improve students' writing skills. The influence of the LMS-assisted PjBL model is an independent variable that is expected to have a great influence on the skill of writing biographical texts as a bound variable in this study. This research is expected to improve students' writing skills with emerging digital technology instruments. One of these learning instruments is the LMS-assisted PjBL model. This application is used as a research instrument to improve students' writing skills in general and improve the writing skills of biographical texts for high school students in class X in particular.

## 2. Methodology

In the quantitative method that has been determined, quasi-experimental design will be the research method used in this study. Quasi-experimental design is the development of true experimental design that is difficult to implement. This design

has a control group, but it cannot fully function to control external variables that affect the execution of the experiment (Sugiyono, 2023). The design form used is the pretest-postest control group design. In this design, two groups were selected according to certain constraints and then given a pretest to determine whether there was a difference between the experimental group and the control group. Good pretest results are expected if the experimental values do not differ significantly.

### *Research Design*

Population is all the data that concerns us in a given scope and time (Suriani et al., 2023). The population that became the object of this study was all students of class X of high school in Kelapa Gading, North Jakarta who participated in learning to write biographical texts using the LMS-assisted PjBL model in the independent curriculum.

A sample is part of a population so a representative sample truly reflects the characteristics of the population. Sampling is a knowledge in the form of sampling techniques. The sample used in this study is a quota sampling. This quota sampling is generally used at the time of opinion collection (Asrulla et al., 2023). The interviewer is tasked with finding a number of people according to certain limitations. This research will ensure an equitable representation of various relevant criteria, such as experience using a learning management system (LMS) or demographic background.

Sampling was carried out by simple random sampling. Sampling is done simply. Simple means that the sample members from the population are taken randomly. The collection of members of the sample without regard to the strata in the population (Sugiyono, 2023).

## 3. Results and Discussion

### *Statistical Analysis of Post-test Results Improvement of Control Class and Experimental Class*

Description of Statistics on Improvement of Class Post-test Results The Controls and Experiment Classes can be seen in the following table :

Table 1. Statistical Analysis of Post-test Results Improvement of Control Class and Experimental Class

| Descriptive Statistics | Total Posttest Score of Students Control Class and Experiment Class |
|---|---|
| Student Score Increased | 42 |
| Student Score Decreased | 25 |
| Fixed Score | 10 |
| Percentage Decrease | 37,31 % |
| Percentage Increase | 62,68 % |

Statistical descriptions of the increase in the number of post-test scores in the control class and the experimental class increased by 42 students. However, in the statistical description of the table, it was obtained that the score that decreased was 25 students. The results of the control class and experimental class research for the values that did not increase and decrease or remained amounted to 10. The total percentage of post-test grade decline from the control class and the experimental class was 37.31%. However, the change in statistical data of students who received treatment in the experimental class was greater than the percentage increase, which was 62.68%. Therefore, research in the understanding of biographical texts for experimental classes has undergone significant changes.

### *Calculating Reliability with Alpha Cronbach*

The following are the SPSS results of the instrument reliability:

Table 2. Case Processing Summary

| | N | % |
|---|---|---|
| Valid | 67 | 100.0 |
| Excluded[a] | 0 | .0 |
| Total | 67 | 100.0 |

a. Listwise deletion based on all variables in the procedure.

The results contained in the SPSS data processing for the realism of the instrument with the case processing summary section are clarified in the table below.

Table 3. Reliability Statistics

| Cronbach's Alpha | N of Items |
|---|---|
| .928 | 67 |

Based on the interpretation of the SPSS results, the reality test can be concluded:

If $\alpha \geq 0.7$, the biography text writing skills assessment rubric is reliable and can be used.
If $\alpha < 0.7$, the rubric needs to be fixed, for example by removing or revising inconsistent indicators.

It can be concluded that the results of the instrument reliability test in this study are 0.928 which means $\alpha \geq 0.7$ so that it can be stated that the rubric for assessing the skills of writing biographical texts in this study is reliable and can be used. Testing with Cronbach's Alpha ensured that these research instruments were consistent and could be used to objectively measure biographical text writing skills.

### *Results of Data Analysis Research*

The results of the pretest and posttest for the experimental class can be seen in the table 4:

Table 4. Research Results of Data Analysis of Biography Text Understanding

| Description | Pretest | Postest |
|---|---|---|
| Maximum Score | 100 | 98 |
| Minimum Score | 38 | 78 |
| Average Score | 68 | 87 |
| Incomplete Students | 44 | 0 |
| Completed Students | 23 | 67 |
| Completeness | 34,33 | 100 |

The pretest result for the experimental class the average score of the students was 68 although there was one student who achieved the highest score of 100. Of the 67 students, there were 44 students who did not complete with a completion percentage of 34.33%. Meanwhile, with the experimental class for post-test scores, the highest student gets a score of 98. The average post-test score of 87 is greater than the pretest score and the completion percentage is 100%, this proves that the control class for understanding biographical texts can be significantly improved. The average score between pretest and post test in the experimental class also increased by 19 points. The analysis of normality test data can be seen in the following table 5 :

Table 5. Tests of Normality

| | Class | Shapiro-Wilk | | |
|---|---|---|---|---|
| | | Statistic | df | Sig. |
| Basic Skills of Comprehension of Biography Texts | Control | .962 | 67 | **.038** |
| | Eksperimen | .967 | 67 | **.074** |
| a. Lilliefors Significance Correction | | | | |

A significant value < 0.05 is normally distributed. The data results in the SPSS table show that the pretest score obtained a significant value of 0.074 which means a significant value of more than 0.05.

### *Students' Biography Text Comprehension Level*

The analysis of normality test data can be seen in the following table 6 :

Table 6. Tests of Normality

| | Class | Shapiro-Wilk | | |
|---|---|---|---|---|
| | | Statistic | df | Sig. |
| Improved Understanding of Biographical Texts | Control | .972 | 67 | .142 |
| | Eksperimen | .971 | 67 | .122 |
| a. Lilliefors Significance Correction | | | | |

From the data that has been analyzed with SPSS, there is a significant difference in the ability to understand biographical texts in conventional classes and LMS-assisted project-based learning model classes.

### *Hypothesis Test*

The research hypothesis regarding increasing students' understanding of biographical texts can be formulated in the following statistical hypothesis.

Ho: There was no difference in the improvement of understanding of biographical texts between students in the control class and students in the experimental class.
H1 : There was a difference in the improvement in understanding of biographical texts between students in the control class and students in the experimental class.

From the results of the SPSS research, conclusions can be formulated based on the following data.

Table 7. Hypothesis Test Summary

| | Null Hypothesis | Test | Sig.[a,b] | Decision |
|---|---|---|---|---|
| 1 | The distribution of Improved Comprehension of Biography Texts is the same across categories of Classes. | Independent-Samples Mann-Whitney U Test | <,001 | Reject the null hypothesis. |

a. The significance level is .050.
b. Asymptotic significance is displayed.

From the data that has been analyzed with SPSS, there is a significant difference in the ability to understand biographical texts in conventional classes and LMS-assisted project-based learning model classes.

***Research Results of Data Analysis of Biography Writing Skills***

The results of data analysis were obtained from the pretest and posttest assessment process carried out by students so that the validity of the data was met. The data is analyzed by descriptive and inferential statistical analysis After the results of the data analysis are known, the following will be processed for data analysis using SPSS.

Table 8. Experiment Class Pretest and Posttest Results Biography Text Writing Skills

| Information | Pretes | Postes |
|---|---|---|
| Maximum Value | 85 | 95 |
| Minimum Value | 45 | 76 |
| Average score | 62 | 82 |
| Incomplete Students | 57 | 0 |
| Completed Students | 10 | 67 |
| Completeness | 14,93 | 100 |

The table is an assessment table of experimental classes with a display of pretest and posttest results of biographical text writing skills. The results obtained from the average score of the students' pretest were 62. Of the 67 students in the experimental class, there were 57 students who did not complete the pretest score with a completion percentage of 14.93%. However, after receiving treatment, the average score obtained from the post-test results was 82 with a 100% completion percentage. It is evident in the experimental class that the skill of writing a biography text can be significantly improved. The average score between the pretest and posttest in the experimental class also increased by 20 points.

### *Prerequisite Test*

The following research results based on SPSS can be seen in the table :

Table 9. Tests of Normality

| | Class | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|---|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| Initial Ability of Biography Text Writing Skill | Control | .161 | 67 | <,001 | .968 | 67 | .082 |
| | Eksperimen | .174 | 67 | <,001 | .952 | 67 | .012 |
| Final Ability of Biography Text Writing Skills | Control | .141 | 67 | .002 | .956 | 67 | .019 |
| | Eksperimen | .247 | 67 | <,001 | .899 | 67 | <,001 |
| Improvement of Biography Text Writing Skills | Control | .069 | 67 | .200* | .980 | 67 | .340 |
| | Eksperimen | .102 | 67 | .081 | .977 | 67 | .250 |

The results of the SPSS prerequisite test on the > 0.05 data were declared to be normally distributed, as evidenced by the initial ability of Shapiro Wilk's biographical text writing skills of the control class 0.82 and the experimental class 0.12. Meanwhile, the improvement in biographical writing skills has also passed 0.05, which is 0.25 which is normally distributed.

### *Homogeneity Test*

The homogeneity of variance test is a statistical method used to determine whether the variances of two or more groups of data are the same or not. The main function of this test is to ensure that the assumption of equal variances is met before conducting further analysis, as can be seen in the following table :

Table 10. Test of Homogeneity of Variance

| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Initial Ability of Biography Text Writing Skill | Based on Mean | .008 | 1 | 132 | .927 |
| | Based on Median | .075 | 1 | 132 | .785 |
| | Based on Median and with adjusted df | .075 | 1 | 127.469 | .785 |
| | Based on trimmed mean | .003 | 1 | 132 | .955 |

a. The results of the SPSS analysis showed that the data varied homogeneously
b. The data are stated to vary homogeneously because the variance between groups is the same or almost the same.
c. The Levene's Test on SPSS states that if Sig. > 0.05, the data is homogeneous, as can be seen from the results of the Sig. 0.927 test
d. The test does not require a nonparametric test because it is homogeneous.

e. The certainty of data homogeneity states that the research is valid and accurate in drawing conclusions.

### *Hypothesis Test*

After obtaining the results of the normality test and homogeneity test, the assessment can be carried out by hypothesis testing using the t-test.

Table 11. Independent Samples Test

| | | | Final Ability Biography Text Writing Skills | |
|---|---|---|---|---|
| | | | **Equal variances assumed** | **Equal variances not assumed** |
| Levene's Test for Equality of Variances | F | | 16.538 | |
| | Sig. | | <,001 | |
| t-test for Equality of Means | t | | -4.751 | -4.751 |
| | df | | 132 | 117.006 |
| | Significance | One-Sided p | <,001 | <,001 |
| | | Two-Sided p | .000 | .000 |
| | Mean Difference | | -3.104 | -3.104 |
| | Std. Error Difference | | .653 | .653 |
| | 95% Confidence Interval of the Difference | Lower | -4.397 | -4.399 |
| | | Upper | -1.812 | -1.810 |

Data interpretation:

$\alpha < 0.05$, then receive H1 this information based on the information of one side $p < 0.001$ as well as the information of two sides p 0.000.
There was a significant difference in the final ability of biographical text writing skills between the control class students and the experimental class students.

### *Skills of Writing Student Biography Texts*

### *Normality Test*

The normality test for the improvement of biographical text writing skills can be seen in the following table :

Table 12. Tests of Normality

| | **Class** | **Shapiro-Wilk** | | |
|---|---|---|---|---|
| | | **Statistic** | **df** | **Sig.** |
| Improved Biographical Text Writing Skills | Control | .980 | 67 | .340 |
| | Eksperimen | .977 | 67 | .250 |

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

From the results of the data on improving students' biographical writing skills, it can be seen that the normal control class and the experimental class are able to use parametric statistics (t-test).

### *Hypothesis Test*

The research hypothesis on the student's biographical text writing skills can be formulated in the following statistical hypotheses.

Ho: There was no difference in the improvement of biographical text writing skills between the control class students and the experimental class students.
H1 : There was a difference in the improvement of biographical text writing skills between the control class students and the experimental class students.

From the results of the SPSS research, a conclusion can be formulated based on the following data.

Table 13. Independent Samples Test

| | | | **Improved Biographical Text Writing Skills** | |
|---|---|---|---|---|
| | | | **Equal variances assumed** | **Equal variances not assumed** |
| Levene's Test for Equality of Variances | F | | .106 | |
| | Sig. | | .746 | |
| t-test for Equality of Means | t | | -2.907 | -2.907 |
| | df | | 132 | 132.000 |
| | Significance | One-Sided p | .002 | .002 |
| | | Two-Sided p | .004 | .004 |
| | Mean Difference | | -4.209 | -4.209 |
| | Std. Error Difference | | 1.448 | 1.448 |
| | 95% Confidence Interval of the Difference | Lower | -7.073 | -7.073 |
| | | Upper | -1.345 | -1.345 |

From the data that has been analyzed with SPSS, there is a significant difference in the ability of biographical text writing skills in conventional classes with LMS-assisted project-based learning model classes.

### *Discussion*

This research is motivated by the application of the LMS-assisted Project Based Learning (PjBL) learning model to biographical text writing skills in grade X students of Private High Schools in the Kelapa Gading area, North Jakarta for the 2024 school year so that the following results were obtained:

a. From the information in the table in the column for improving the understanding of biographical texts in the experimental class, it can also be explained that the number of students who have increased by 58 students. The students who were

detected experienced a decrease in scores of 6 students and a fixed score of 3 students. The total percentage of all students who experienced research treatment to improve the understanding of biographical texts in the experimental class was 86.56%. The significant influence of the LMS-assisted Project Based Learning (PjBL) model on the knowledge of biographical text material in students can increase students' knowledge in analyzing science properly. This can be analyzed from the results of the project carried out in the experimental class, both pretest and posttest. Based on the results of IBM SPSS, the prerequisite test obtained on the > 0.05 data was declared to be normally distributed as evidenced by the basic Shapiro Wilk ability of the control class 0.38 and the experimental class 0.74. The normality test described through the table and statistical graph on the research results produced a significant value < 0.05 with normal distribution.

The results of the data in the SPSS table show that the pretest score obtained a significant value of 0.074 which means a significant value of more than 0.05. The Leven's homogeneity test on SPSS states that if Sig. > 0.005 is homogeneous data, it can be seen that the results of the Sig. 0.079 test can be seen. From these results, the test does not need a non-parametric test because it is homogeneous. The capacity for data homogeneity states that this study is valid and accurate in drawing conclusions. After obtaining the results of the normality test and homogeneity test, the assessment can be processed by hypothesis testing using the t-test. After testing the hypothesis using the t-test, the interpretation of the data is known $\alpha < 0.05$, then receive H1 this information based on p one-sided 0.003 and p two-sided 0.006. Thus, it can be stated that there is a significant difference in the basic (initial) ability to comprehend biographical texts between the students of the control class and the experimental class.

b. According to the information in table, the acquisition of posts writing biographical text skills has increased with the following roles: the total number of students who have increased is 42 students, students have decreased in scores by 16 students, and the number of students who have not experienced a change in score is 9 students. The percentage of students who experienced research treatment in the post-test score in the experimental class was 62.68%. The significant influence of the use of the LMS-assisted Project Based Learning (PjBL) learning model on the biographical text writing skills of students is very large when viewed from the results of their pretests and postes. Projects done with the help of PPT in canva, group discussions using google doc., and the stimulus of writing a biography with videos uploaded on moodle all have a great influence on biographical text writing skills compared to conventional learning. This can be seen from the results of learning in the classroom and the results of the assessment analyzed in this study.

Based on the results of the IBM SPSS application assistance research, the Prerequisite Test on the data >0.05 was declared to be distributed normally, as evidenced by Shapiro Wilk, the initial ability to write biographical text skills, the control class 0.82 and the experimental class 0.12. The normality test can be obtained, the results are distributed normally, because ≥ 0.05 test of normality,

initial ability to write biographical texts, 0.12. The improvement in biographical text writing skills has also passed 0.05, which is 0.25 which is normally distributed. The homogeneity test obtained from the Leven's Test at SPSS is stated if Sig. >0.05, homogeneous data, the test results of Sig. 0.93 can be seen. These results show that there is no need for non-parametric tests because they are homogeneous. The hypothesis test in the study was obtained as a result of data interpretation $\alpha < 0.05$ then received *H1*, this information is based on one-sine $p < 0.001$ as well as the two-sided information p 0.000. From the hypothesis test, it can be concluded that the student's biographical text writing skills are different, there is a difference in the improvement of writing skills between the students of the control class and the experimental class. The formula for taking it is stated in:

Ho : there was no difference in the improvement of biographical text writing skills between the control class and the students of the experimental class.
H1: there was a difference in the improvement of biographical text writing skills between the students of the control class and the students of the experimental class.

Based on research data, pretests and postes in experimental classes showed that there was an increase in the skills of writing biographical texts for students in class X of private high schools in the Kelapa Gading area, North Jakarta after being given treatment in the form of learning using *the LMS-assisted project based learning* (PjBL) model. Basic knowledge of biographical texts can improve well and the average skill level of students writing biographical texts before being given treatment is at a score of 60 or in the low category with a score below the school's KKM of 75, but after being given a different learning model, namely using *a project-based learning* model (PjBL) with the help of LMS, the value of students' skills in writing biographical texts increased to 95 or was in the high category. This shows that students' skills in writing biographical texts increased by 62.68% after being given LMS-assisted *project based learning* (PjBL) model learning. The results of the analysis of research data can be found that the post-test results *(*after being given treatment) of each student are higher than the results of the pretest (before being given treatment). This is evidenced by the results of statistical calculation in the form of hypothesis testing with the shapiro wilk test presented in the SPSS *Statistics* program showing that the t-test is obtained in a significant difference in the development of knowledge of biographical text material with a significance value of $0.001 < 0.05$, then the hypothesis Ha is accepted. This means that a negative value in the shapiro wilk test indicates a comparison before and after the *LMS-assisted project-based learning* (PJBL) learning model. This means that there is a comparison of students' skills in writing biographical texts increased after being given a *project-based learning* (PjBL) model with the help of LMS.

## 4. Conclusion

Research on the influence of project-based learning model (PjBL) assisted by a learning management system (LMS) on biographical text writing skills in grade X

of high school found several research analysis results. Based on the results of the SPSS research analysis in the processing of class grades and student work projects that have been carried out, there are several points of research findings that are concluded as follows. The experimental class demonstrated a significant improvement in understanding biographical texts after implementing the project-based learning model supported by a learning management system. Many students showed increased scores, while a few had decreased or unchanged grades. Statistical analysis revealed a notable influence of the PjBL model on students' writing skills. The research highlighted that using digital learning modules effectively enhanced students' knowledge of biographical texts, showcasing the advantages of modern teaching methods in improving learning outcomes in high school education.

In the experimental class, there was an improvement in their biographical text writing skills, resulting in a significant increase in post-test scores. The research using the LMS-supported PjBL model revealed significant differences, enhancing students' enthusiasm for writing and encouraging discussions and questions. The application of digital learning modules positively impacted character description writing. Unlike conventional learning, this approach created a more engaging atmosphere. Normality and homogeneity tests confirmed the reliability of the data, indicating no need for non-parametric testing, as the results showed a normal distribution and homogeneity.

## References

Adawiyah, F. (2021). Variasi Metode Mengajar Guru Dalam Mengatasi Kejenuhan Siswa Di Sekolah Menengah Pertama. *Jurnal Paris Langkis*, *2*(1), 68–82. https://doi.org/10.37304/paris.v2i1.3316

Aji, L. J., Hendrawaty, T., Febrianti, R., & Wulandari, N. D. (2024). *Model-Model Pembelajaran Dalam Dunia Pendidikan* (A. F. Qohar (ed.)). Banjarnegara : PT. Penerbit Qriset Indonesia.

Artawan, G., Gede, D., & Setiawan, Y. (2017). Pengaruh Pendekatan Konstruktivisme Terhadap Aktivitas. *Journal of Education Research and Evaluation*, *1*(4), 217–235. https://doi.org/10.23887/jere.v1i4.121

Asrulla, Risnita, Jailani, M. S., & Jeka, F. (2023). Populasi dan Sampling (Kuantitatif), Serta Pemilihan Informan Kunci (Kualitatif) dalam Pendekatan Praktis. *Jurnal Pendidikan Tambusai*, *7*(3), 26320–26332. https://doi.org/10.31004/jptam.v7i3.10836

Fahmi, F. N. (2021). Peningkatan Kemampuan Menulis Karangan Siswa Kelas IV di MI Attahdzibiyyah Kecamatan Babat Kabupaten Lamongan Melalui Penggunaan Media Gambar Berseri. *MIDA: Jurnal Pendidikan Dasar Islam*, *4*(1), 1–14. https://doi.org/10.52166/mida.v4i1.491

Faslia, F., Aswat, H., & Aminu, N. (2023). Pelibatan Model Projek Based Learning pada Pembelajaran Ilmi Pengetahuan Sosial (IPS) Menuju Pelajar Pancasila pada Jenjang Sekolah Dasar. *Jurnal Basicedu*, *7*(6), 3895–3904. https://doi.org/10.31004/basicedu.v7i6.6623

Helaluddin, & Awalluddin. (2020). *Keterampilan Menulis Akademik : Panduan*

*bagi Mahasiswa di Perguruan Tinggi* (D. Fitriyyah (ed.); 1st ed., Issue Agustus). Serang : Media Madani Publishing.

Jauhari, M. I. (2018). Peran Media Pembelajaran dalam Pendidikan Islam. *Journal PIWULANG*, *1*(1), 54–67. https://doi.org/10.32478/ngulang.v1i1.155

KBBI VI. (2016). KBBI VI Daring. *BPPB Kemdikbud*. https://kbbi.kemdikbud.go.id/entri/menulis

Masruroh, U., & Imam, S. (2022). Asesmen Perkembangan Kognitif dengan Metode Eksperimen Melalui Kegiatan Pencampuran Warna. *Journal of Early Childhood and Character Education*, *2*(2), 129–144. https://doi.org/10.21580/joecce.v2i2.10408

Nisak, S. K. (2024). Optimizing Interactive Learning Management System (LMS) in Improving Students' English Language Skills. *ZIJEd: Zabags International Journal of Education*, *2*(2), 66–74. https://doi.org/10.61233/zijed.v2i2.21

Sugiyono. (2023). *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (S. E. Pratiwi (ed.)). Bandung :Penerbit Alfabeta.

Suriani, N., Risnita, & Jailani, M. S. (2023). Konsep Populasi dan Sampling Serta Pemilihan Partisipan Ditinjau Dari Penelitian Ilmiah Pendidikan. *Jurnal IHSAN : Jurnal Pendidikan Islam*, *1*(2), 24–36. https://doi.org/10.61104/ihsan.v1i2.55

Thomas, J., Condliffe, B., & Quint, J. (2000). *Whatever Form a Project Takes , It Must Meet These Criteria To Be Gold Standard Pbl* . California : The Autodesk Foundation.

Yusmar, F., & Fadilah, R. E. (2023). Analisis Rendahnya Literasi Sains Peserta Didik Indonesia: Hasil Pisa Dan Faktor Penyebab. *LENSA (Lentera Sains): Jurnal Pendidikan IPA*, *13*(1), 11–19. https://doi.org/10.24929/lensa.v13i1.283

Zulviana, T., Pen, J. B., Murhananto, & Wadi, S. (2021). *Optimalisasi Penggunaan Learning Management System (LMS) dalam Meningkatkan Mutu Pembelajaran* (M. Rahmi (ed.)). Jakarta : Direktorat Sekolah Menengah Atas Kemendikbudristek.

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