Article

The Effect of Digital Infographic-Based Project-Based Learning Method on Writing Skill of Descriptive Text

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A B S T R A C T

This study examines English language skills within the Merdeka Curriculum, focusing on the writing difficulties faced by students, particularly in producing descriptive texts. The methods commonly employed by teachers tend to emphasize reading skills, which negatively impacts writing learning outcomes. This research utilizes a quantitative approach with a factorial experimental design, involving 64 seventh-grade students at SMP Negeri 1 Adiwerna, divided into control and experimental classes. Data were collected through tests assessing students' writing skills in descriptive texts, with variables including the Project-Based Learning (PjBL) method based on digital infographics, writing learning outcomes, and academic achievement. The analysis results indicate significant differences between pre-test and post-test scores, as well as differences in academic achievement between students in low and high categories. There is also an interaction between academic achievement and the teaching method on students' learning outcomes. This study recommends the development of teaching methods that combine conventional elements with PjBL, as well as the need for teacher training in implementing these methods to enhance students' learning outcomes. Further research is also suggested to explore ways to increase student motivation in the learning process.

Keywords: *Project-Based Learning Method, Digital Infographics, Learning Outcomes, Descriptive Text, Learning Performance.*

INTRODUCTION

English for grade VII in the Merdeka Curriculum is included in phase D subjects and is a compulsory learning program for grade VII students as beginner English language learners. English learning for grade VII at the junior high school level provides opportunities for students to explore in addressing and taking solutions to important problems that occur around them. According to the independent curriculum, the issues raised in this English learning refer to 4 (four) of the 17 (seventeen) issues listed in the Sustainable Development Goals (SDGs), including: (1) scope of environmental awareness; (2) scope of digital security; (3) scope of nutrition and health and; (4) scope of financial literacy. (Damayanti: 2022)

Several other things that underlie English learning in the Merdeka Curriculum include the Pancasila Learner Profile which focuses on strengthening students' characters such as faith and noble character, independence, critical reasoning, creativity, mutual cooperation, and global diversity, both directly and indirectly in interacting with society. social and natural environment through contextual learning.

The development of English language learning for grade VII junior high school (Phase D) in the Merdeka Curriculum opens opportunities for learners to apply English in six language skills, namely listening, speaking, reading, viewing, writing, and presenting in an

integrated manner in various types of texts. The six language skills include learning outcomes that refer to the Common European Framework Reference for Language; Learning Teaching Assessment (CEFR), which is the determination of various levels of proficiency compiled by the Council of Europe.

The hope and purpose of learning English in the independent curriculum is to provide opportunities for students to communicate with world citizens from diverse cultural backgrounds. This implies that by mastering English learners will get a greater opportunity to interact actively with citizens of the world without any language gap. Through these English language skills, learners can adapt to the international world in various fields including education, business, trade, science, law, tourism, international relations, health and technology. Learners who are qualified in English are able to open access to the outside world and understand intercultural ways of thinking and culture, this is also an opportunity for learners to hone their critical thinking skills and strengthen their identity in appreciating differences.

The purpose of learning English in general according to Ratminingsih et al (2021) is the achievement of communicative competence, which means that students are able to use the language they learn to communicate with their surroundings. So this communicative competence means that learners can use the language they learn effectively in communication without being burdened by what they learn.

According to Halliday and Mathiesen in Hermawan (2022: 165) regarding Learning Outcomes, Primary Education Levels, and Secondary Education Levels in the Independent Curriculum states that "...When people speak or write, they produce text, and text is what listeners and readers engage with and interpret...". So the essence of learning English in the Independent Curriculum is that students are able to produce products in the form of simple texts related to the themes they study. We need to know together that communication is not just a sentence but will occur at the text level, so the meaning conveyed is not just words but must be based on context. So that at the end of learning, students are expected to have English communicative skills using various multimodal texts (oral, written, visual, and audiovisual), intercultural abilities to understand and appreciate the perspectives, practices, and products of Indonesian and foreign cultures, confidently and responsibly learners express as independent, skilled, critical reasoning and creative individuals.

The implementation of English learning based on the Merdeka Curriculum at the Primary and Secondary Education levels is actually very helpful for students in achieving the ability to communicate in English as part of life skills. One of the approaches applied in learning English is a genre-based approach, meaning that learning focuses on text in various modes, whether oral, written, audio, visual, or multimodal.

In the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, it is stated that the types of texts taught in English vary, namely narration, description, exposition, procedure, argumentation, discussion, special texts (short messages, advertisements), authentic texts. These texts are presented not only in written form but also spoken text (monologue and dialog), visual text, audio text, and multimodal text (text containing verbal, visual and audio aspects). These various texts are presented on paper or on the screen of a device or laptop. This is done in an effort to facilitate learners to be skilled in technological and digital literacy which is a 21st century skill. This digital and technological literacy needs to be mastered and developed so that learners can become lifelong learners and also become a digital society. the development of digital equipment in today's society, it should be easier for learners to find learning resources such as reading magazines, newspapers, books via smart phones or devices connected to the internet network. Even learners can learn online business and shop online.

Looking at the statements listed in the independent curriculum regarding English language learning above, it is very inversely proportional to the reality that occurs. Many problems arise in learning English based on the independent curriculum. Moreover, in the previous academic year English was not taught at all in elementary schools, and was only

introduced at the junior high school level. This greatly affects the English language skills of seventh grade students. Some other things that affect English learning are that students are accustomed to being "receptive bilingualism", that is, they are only able to understand English to the extent of knowledge so that they are less able to use English to communicate with others.

There are two main language skills according to Ratminingsih (2021:5), namely receptive skills and productive skills. Receptive skills or receiving skills, namely learners only receive material that already exists (ready-made text). This skill is called passive skill because learners only listen and understand the content of the material presented. There are two types of receptive skills, namely listening and reading. Although it is called a passive skill, it requires cognitive activeness in understanding and learning it. Without this process, learners will have difficulty in understanding the material presented in the text. Meanwhile, productive skills are learners' skills in producing or modifying material (text) with linguistic knowledge that has been mastered. These skills are referred to as active skills because in the learning process, learners must be more active and creative in expressing ideas or ideas in both written and oral forms. In the 2013 curriculum, there are only two productive skills, namely speaking and writing, but in its development in the independent curriculum, there are three kinds of productive skills, namely speaking, writing, and presenting).

In general, the six English language skills in the Merdeka Curriculum have relatively the same level of difficulty. However, many studies reveal that writing is the most difficult skill, considering that in writing learners must be able to express their own ideas using adequate language skills to produce meaningful writing. Based on observations, and what English teachers generally do in the classroom, the most learned and practiced skill is reading. This means that learners learn English more as a science. This is in relation to preparing learners for school tests or exams where the questions are dominated by reading skills. This has an impact on the low learning outcomes of students in writing, especially descriptive text.

Based on the results of observations made in classes VII A to VII F at SMP Negeri 1 Adiwerna, English learning which is carried out classically which aims to improve learning outcomes in descriptive text writing skills, obtains low learning outcomes. This can be seen in the learning outcomes of VII A to VII F students totaling 189 students, namely: There are 56 learners who get the highest score of 82 (29.62%), 44 learners with a score of 78 (23.28%) while 89 learners get less than 78, namely 32 learners with a score of 70 (16.93%), 28 learners with a score of 66 (14.81%), 20 learners with a score of 64 (10.58%), and 9 learners with a score of 60 (4.76%). The average result of the descriptive text writing skill test score is 73.71 which is still far below the KKTP (Criteria for Achievement of Learning Objectives) for English Class VII. Apart from the test results, observations made by researchers found that the enthusiasm of students in learning activities for writing descriptive text skills was relatively low, in addition to many students complaining and feeling insecure. Learners have difficulty in doing their assignments related to descriptive text writing skills.

Observing the scores of students in classes VII A to VII F of SMP Negeri 1 Adiwerna above, it can be said that the learning outcomes of descriptive text writing skills owned by students are still quite low. The low learning outcomes of descriptive text writing skills cause a decrease in the achievement of students VII A to VII F in learning English, this is seen from the absorption of students both in understanding material about vocabulary, spelling, diction, grammar, and punctuation. The material is taught in an integrated manner in all six English language skills, so that if students do not understand or their absorption of the material is low, it affects the learning outcomes of descriptive text writing skills. Low mastery of vocabulary, spelling, diction, grammar, and punctuation makes it difficult for learners to compose sentences accurately, fluently, and acceptably. This also greatly affects the learning outcomes of descriptive text writing skills, which then has an impact on the decline in student achievement. Another factor is the lack of teacher creativity in choosing

learning methods and media and managing learning so that students feel uninterested or challenged to take part in learning, even learning tends to be boring.

Aguero et al (2020: 24) state that educators must be able to create a positive learning environment and always provide feedback and manage mistakes made by students wisely so that there will be good interaction between students and educators. Learners who feel relaxed and are in a comfortable learning environment will more easily understand the material when compared to students who feel pressured and uncomfortable in learning. So that the humanistic approach must also be applied by educators not only to arouse cognitive abilities but to foster the affective intelligence of students, namely creating good behavior during learning.

As agents of change, educators play a crucial role in guiding students to achieve the desired level of learning and development. In doing so, educators must recognize that they are teaching early adolescents who belong to Generation Z, often referred to as Gen Z, a generation with unique characteristics shaped by their environment. According to Ariesta (2022:114), Gen Z is "Phigital," seamlessly integrating the virtual and physical worlds into their daily lives. They are "Hyper-custom," striving to create unique personal brands visible to the world, and "Realistic," with pragmatic mindsets focused on future planning. Additionally, they experience "Fear of Missing Out" (FOMO), a concern about falling behind or missing opportunities. As "Economists," they value efficiency and cost-effectiveness, while their "Do It Yourself" (DIY) attitude enables them to independently learn and solve problems through platforms like YouTube and Instagram. Furthermore, they are "Driven" and highly competitive, excelling in multitasking by utilizing multiple devices simultaneously. Understanding these traits is essential for educators to adapt teaching strategies that resonate with the distinct needs and learning styles of Gen Z students.

By looking at the various characteristics of these learners, educators must adjust the learning system that is considered with the conditions of Gen Z characteristics, researchers try to provide several solutions to improve learning outcomes of descriptive text writing skills which is the main objective of this study, namely by creating an atmosphere that encourages students to be able to play an active role in the learning process. Learning activities are carried out by applying a project-based learning model which in the application process students are expected to produce digital infographics in the form of descriptive text with the subject matter of culinary and Me. Through this project-based learning model, it is hoped that the learning outcomes of students' descriptive text writing skills will increase, and be able to lead students to achieve high achievement, not only in the field of English but thoroughly in all subjects.

The reason why the researcher chose the project-based learning model based on digital infographics is based on experiences and observations made in the implementation of the Pancasila Student Profile Strengthening Project (P5) at SMP Negeri 1 Adiwerna, it appears that seventh grade students are very enthusiastic and active in carrying it out. Researchers saw that most of the seventh grade students were very comfortable and relaxed in doing every task given based on the themes given, namely Bangunglah Jiwa dan Raganya, Suara Demokrasi and Entrepreneurship. Learners are very active and creative in making their project work and then being able to present it in front of the class. By looking at this fact, the researcher tried to apply the project-based learning model based on digital infographics in English subjects, especially in the material of descriptive text writing skills, in the hope of improving their learning outcomes.

In addition, researchers also read several sources including ebooks, articles, journals and some previous research results related to the Project-Based Learning model and digital infographics. From several ebooks and articles that contain project-based learning and digital infographics, it is mentioned that project-based learning is an effective learning model to be applied in learning English, especially in the material of writing skills of various types of texts. In this study, the researcher also took digital infographics as the project work. It is

intended that the work can be used as learning media or learning resources for future learners.

Referring to the reason for choosing digital infographics, in accordance with McCrindle's statement in Maknun et al (107: 2018) which states that the current generation is a visual generation, they tend to choose to watch videos that summarize the contents of a news story rather than having to read books or articles and discuss them. For this reason, the researcher took digital infographics as a work product in English learning using project-based learning model. From the description of the background, the author then focuses his research on the title The Effect of Project Based Learning in Making Digital Infographics on Learning Outcomes of Descriptive Text Writing Skills for Grade VII Students at SMP Negeri 1 Adiwerna in the 2022/2023 Academic Year. It is hoped that this research can have a positive impact on learning and be able to realize educational goals. Based on the problems described above, the objectives to be achieved in this study are to find out: The effect of the application of the Project Based Learning learning model based on digital infographics on the learning outcomes of writing descriptive text for seventh grade students at SMP Negeri 1 Adiwerna.

METHOD

This research uses quantitative methods that emphasize numbers and statistical analysis. According to Sugiyono (2022: 23), quantitative research is based on the philosophy of positivism and is used to research certain populations or samples with data collection through research instruments. Data analysis is quantitative to describe and test hypotheses. The research design used is Factorial Design with a 2x2 pattern, which is a development of true-experimental design, and pays attention to the effect of the treatment variable on the dependent variable (Sugiyono, 2022: 119). This study took the population of students in class VII A and VII F SMP Negeri 1 Adiwerna, totaling 64 students.

In analyzing the data, researchers used the classical assumption test, which included normality test and homogeneity test. In addition, researchers also apply quantitative analysis which includes Pre- and Post-Test and Two Way Anova test. Then, hypothesis testing was also carried out after the normality test which stated that the data was normally distributed and the homogeneity test which stated that the data of the two classes had homogeneous variances.

FINDINGS AND DISCUSSION

Pre-Test and Post-Test Result of Class VII F
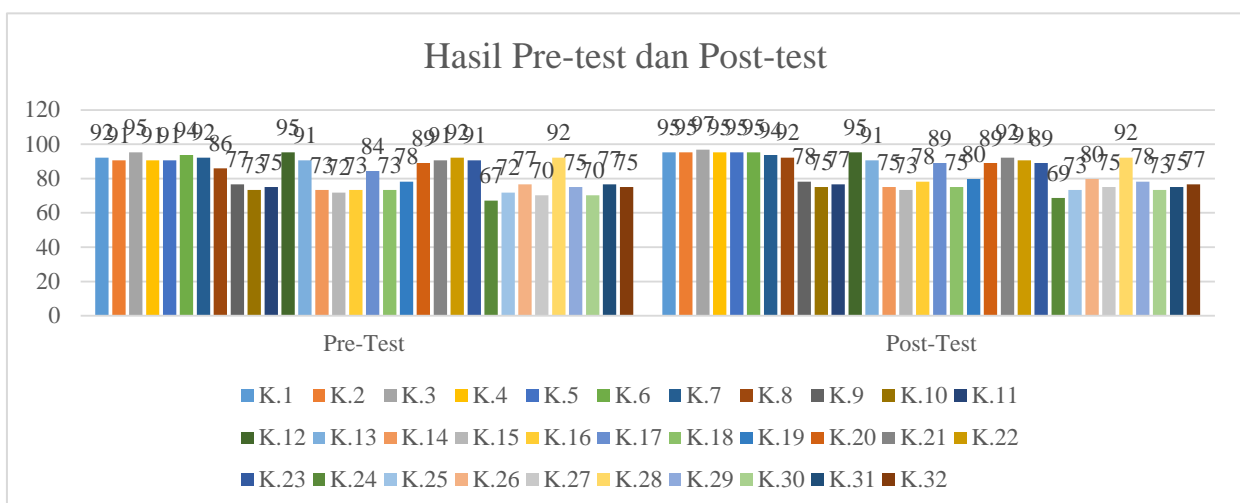
Figure 1. Pre-Test and Post-Test Results of Class VII F

Based on Figure 1. which contains the results of the pre-test and post-test, it can be seen that the pre-test to post-test scores have increased well. The average pre-test score was 82.324 with the lowest score of 67 and the highest score of 95. While the post-test value experienced a good change, this was evidenced by the average value obtained of 84.326 with the lowest value of 69 and the highest value of 97.

Description of Pre-Test Data Class VII F

Class VII F is the class used for research with the Project Based Learning (PjBL) learning model using infographic media. Before being given treatment in the form of a Project Based Learning (PjBL) learning model using infographic media, pre-test questions are given to students first to measure initial abilities. Data on the initial learning outcomes (pre-test) of students on cognitive aspects have been calculated with SPSS assisted statistical calculations as follows:

Table 1. Analysis of Pre-Test Score Description of Class VII A and VII F

	N	Minimum	Maximum	Average	Deviation
Control Pretest	32	69	90	78,438	7,130
Experiment Pretest	32	67	95	82,324	9,269

Table 1. presents a descriptive analysis of pre-test scores for two groups of students in classes VII A and VII F, namely the control and experimental groups, each with 32 students. The minimum score for the control group was 69, while for the experimental group it was 67, with a maximum score of 90 for the control group and 95 for the experimental group. The mean pre-test score showed that the experimental group obtained 82.324, higher than the control group which reached 78.438, indicating better academic performance in the experimental group. In addition, the standard deviation of the control group was 7.130, while that of the experimental group was 9.269, indicating that there was greater variation in learners' performance in the experimental group. Overall, this table shows that the experimental group not only had higher mean scores, but also greater variation in students' academic performance compared to the control group.

Description of Post-Test Data for Classes VII A and VII F

Data on student post-test results were obtained after students received treatment during learning in the form of a Project-Based Learning (PjBL) learning model using infographic media. Data collection was only carried out in VII A and VII F classes, each of which amounted to 32 students. The average final learning outcomes (post-test) of descriptive text material based on SPSS calculations are as follows in table 3.

Table 2. Analysis of Post-Test Score Description of Class VII A and VII F

	N	Minimum	Maximum	Average	Deviation
Control Pretest	32	69	95	80,152	7,213
Experiment Pretest	32	69	97	84,326	9,184

Table 2. presents a descriptive analysis of post-test scores for two groups of students in classes VII A and VII F, namely the control and experimental groups, each consisting of 32 students. The minimum score for the control group was 69, while that for the experimental group was 69, while the maximum score for the control group was 95 and that for the experimental group was 97. The mean of the post-test scores showed that the experimental group got a mean score of 84.326, higher than the control group whose mean was 80.152, signifying better academic performance in the experimental group. In addition, the control group's standard deviation of 7.213 shows relatively less variation compared to the

experimental group which had a standard deviation of 9.184, indicating greater variation in learner performance in the experimental group. Overall, this table shows that after the learning intervention, the experimental group performed better in the posttest than the control group, as well as having greater variation in scores.

Table 3. Frequency of Learners' Learning Achievement

Class	Category	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Control	High	17	53,1	53,1	53,1
	Low	15	46,9	46,9	100
	Total	32	100	100	
Experiment	High	16	50	50	50
	Low	16	50	50	100
	Total	32	100	100	

Table 4 presents the frequency of learning achievement of learners from two groups, namely the control group and the experimental group. Each group consists of 32 learners, with achievement categories divided into high and low. In the control group, the frequency of learners with high achievement was 17 learners (53.1%) and the same number, 15 learners (46.9%), had low achievement, bringing the total frequency to 32 learners (100%). Similarly, the experimental group showed an identical frequency distribution, with 16 learners (50%) high achievers and 16 learners (50%) low achievers, making a total of 32 learners (100%). The valid percentage and cumulative percentage for each category in both groups also showed similar values, with 50% in the high category and 100% in the low category, indicating regularity and balance in the distribution of learners' learning achievement in both groups.

Table 4. Hasil Uji Wilcoxon Signed Rank Test

	Post-Test -Control – Pre Test_Control	Post Test_ Experiment – Pre Test_ Experiment
Z	-4,451	-4,032
Signifikansi	0,000	0,000

Table 4 presents the results of the Wilcoxon Signed Rank Test conducted to evaluate the difference in students' learning achievement between the pre-test and post-test results in the control group and the experimental group. The analysis results show that the Z statistical value for the control group is -4.451 with a significance value (p-value) of 0.000, and for the experimental group, the Z value is -4.032 with the same significance of 0.000. The significance value that is less than 0.05 in both groups indicates that there is a significant difference between the pre-test and post-test scores, which indicates that the intervention carried out, both in the control and experimental groups, succeeded in improving students' learning outcomes. Thus, these results support the positive effect of the treatment applied in this study on improving learners' learning achievement.

Table 5. Mann-Whitney Test Results of Student Learning Outcomes

	Result
Mann-Whitney U	355,500
Wilcoxon W	883,500
Z	-2,108
Asymp. Sig. (2-tailed)	0,035

Table 5 presents the results of the Mann-Whitney test comparing student learning outcomes between conventional learning methods and Project-Based Learning (PjBL)

methods. The Mann-Whitney U value obtained is 355.500 with an Asymp. Sig. (2-tailed) value of 0.036 indicates that there is a statistically significant difference in students' learning outcomes between the conventional method and the PjBL method ($p < 0.05$). This implies that there is a visible difference between the two learning approaches, there is strong evidence that one method is more effective than the other in improving learners' learning outcomes.

Table 6. Mann-Whitney Test Results of Learners' Learning Achievement

	Result
Mann-Whitney U	0,000
Wilcoxon W	4,96,00
Z	-6,894
Asymp. Sig. (2-tailed)	0,000

Table 6 presents the results of the Mann-Whitney test comparing students' learning achievement between the low and high categories. The Mann-Whitney U value is 0.000 with Asymp. Sig. (2-tailed) reached 0.000, which indicates that the learning outcomes of students from low and high categories are statistically significant ($p < 0.05$). This indicates that there is a real difference in the learning achievement of learners between the low and high categories, thus showing that learners in the high category have much better learning achievement compared to learners in the low category.

Tabel 7. Normalitas Two Way ANOVA

Description	Statistic	df	Significance
Standardized Residual for Learning Outcomes	0,146	64	0,200

Table 7 shows the results of the residual normality test for the learning outcomes variable in the Two Way ANOVA analysis. The test results obtained a statistical value of 0.146 and a degree of freedom (df) of 64, obtained a significance (p-value) of 0.200. Because the significance value is greater than 0.05, it can be concluded that the residual data is normally distributed. This shows that the normality assumption, which is one of the important requirements for the validity of the Two Way ANOVA analysis, has been met. Furthermore, the Two Way ANOVA test was conducted to determine the effect of independent variables on the dependent variable and the effect of the interaction of independent variables on the dependent variable in table 9 below.

Table 8. Two Way ANOVA Test Results

Description	F	Sig.
Corrected Model	145,641	0,000
Intercept	47365,250	0,000
Learning Achievement	397,383	0,000
Learning Methods	37,099	0,000
Learning Achievement*Learning Methods	8,282	0,006

Table 8 presents the results of a two-way analysis of variance (Two Way ANOVA) that evaluates the effect of learning achievement and learning methods on the observed variables. The results show that learning achievement has an F value of 397.383 with a significance (Sig.) of 0.000, which indicates a significant difference. Learning methods also had a significant effect with an F value of 2594.794 and Sig. 0,000. In addition, the interaction between learning achievement and learning methods showed an F value of 37.099 with Sig. 0,000. In addition, the interaction between learning achievement and learning methods showed an F value of 8.282 with Sig. 0.000, indicating that the combination of these two

variables significantly affects learning outcomes. Overall, both learning achievement and learning methods, both individually and in interaction, have a significant impact on students' learning achievement.

CONCLUSIONS

The study conducted at SMP Negeri 1 Adiwerna revealed significant findings regarding students' learning outcomes and methods. A notable difference was observed between the pre-test and post-test scores in both the control and experimental groups, indicating progress in learning. Furthermore, there was a statistically significant difference in learning outcomes between students taught using conventional methods and those taught through Project-Based Learning (PjBL), highlighting the effectiveness of PjBL in enhancing student performance. Additionally, students in the high achievement category outperformed those in the low category, demonstrating the influence of prior achievement levels on learning success. Finally, the study found an interaction between learning achievement and teaching methods, suggesting that the effectiveness of learning methods, such as PjBL, is influenced by students' achievement levels, emphasizing the need for tailored educational strategies..

ACKNOWLEDGEMENTS

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