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THE INFLUENCE OF PBL MODELS, DEMONSTRATIONS AND INITIAL KNOWLEDGE ON INCREASING LEARNING ACHIEVEMENT

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ABSTRAK: Tujuan penelitian ini adalah untuk mengetahui: (1) perbedaan prestasi belajar antara penggunaan model PBL dan metode demonstrasi pada mata pelajaran bahasa Inggris, (2) perbedaan prestasi belajar antara pengetahuan awal tinggi dan pengetahuan awal rendah pada bahasa Inggris. mata pelajaran, dan (3) interaksi antara penggunaan model PBL, metode demonstrasi dan pengetahuan awal terhadap prestasi belajar bahasa Inggris siswa kelas VII SMPN 48 Surabaya. Penelitian eksperimen ini dilakukan dengan menggunakan desain faktorial 2x2. Subjek yang menjadi fokus eksperimen diambil secara acak klasikal yaitu empat kelas VII SMPN 48 Surabaya. Hipotesis penelitian diuji dengan menggunakan uji statistik Analysis of Variant (Anova). Hasil perhitungan menunjukkan bahwa: (1) Terdapat perbedaan pengaruh penggunaan model PBL dan metode demonstrasi terhadap prestasi belajar bahasa Inggris siswa kelas VII SMPN 48 Surabaya yaitu siswa yang menggunakan model PBL memiliki hasil belajar yang lebih baik. dibandingkan siswa yang menggunakan metode demonstrasi, (2) Terdapat perbedaan pengaruh pengetahuan awal tinggi dan pengetahuan awal rendah terhadap prestasi belajar siswa di kelas VII SMPN 48 Surabaya yaitu siswa dengan pengetahuan awal tinggi memiliki prestasi belajar yang lebih baik dibandingkan siswa dengan pengetahuan awal yang rendah, dan (3) Terdapat pengaruh interaksi antara model pembelajaran dan pengetahuan awal terhadap prestasi belajar bahasa Inggris siswa kelas VII SMPN 48 Surabaya, dalam hal ini pengetahuan awal sebagai variabel moderator sangat mendukung hubungan yang kuat antara variabel independen dan variabel dependen. Pengaruh penggunaan model Problem Based Learning (PBL) dengan pengetahuan awal tinggi dapat meningkatkan prestasi belajar. Pengaruh penggunaan model Problem Based Learning (PBL) dengan pengetahuan awal tinggi dapat meningkatkan prestasi belajar. Berdasarkan capaian penelitian, disimpulkan bahwa penggunaan model Problem Based Learning (PBL) dengan metode demonstrasi dan pengetahuan awal dapat meningkatkan prestasi belajar bahasa Inggris siswa kelas VII SMPN 48 Surabaya.
Kata kunci: Model PBL, Metode Demonstrasi, Pengetahuan Awal, Prestasi Belajar Bahasa Inggris

ABSTRACT: *The purpose of this study was to determine: (1) the difference in learning achievement between the use of the PBL model and the demonstration method in English subject, (2) the difference in learning achievement between high initial knowledge and low initial knowledge in English subject, and (3) the interaction between the use of the PBL model, the demonstration method and prior knowledge on the English learning achievement of class VII students of SMPN 48 Surabaya. This experimental research was carried out using a 2x2 factorial design. The subjects that became the focus of the experiment were taken classically randomly, namely four classes VII of SMPN 48 Surabaya. The research hypothesis was tested using the Analysis of Variant (Anova) statistical test. The results of the calculations show that: (1) There are differences in the effect of using the PBL model and the demonstration method on the English learning achievement of class VII students of SMPN 48 Surabaya, namely students who use the PBL model have better learning achievement than students who use the demonstration method, (2) There is differences in the effect of high prior knowledge and low prior knowledge on student achievement in class VII SMPN 48 Surabaya, namely students with high prior knowledge have better learning achievement than students with low prior knowledge, and (3) There is an interaction effect between the learning model and prior knowledge on the English learning achievement of class VII students of SMPN 48 Surabaya, in this case prior knowledge as a moderator variable strongly supports a strong relationship between the independent variable and the dependent variable. The effect of using the Problem Based Learning (PBL) model with high initial knowledge can improve learning achievement. The effect of using the Problem Based Learning (PBL) model with high initial knowledge can improve learning achievement. Based on the research achievements, it was concluded that using the Problem Based Learning (PBL) Model with demonstration methods and prior knowledge could improve English learning achievements for class VII students of SMPN 48 Surabaya.*
Keywords: *PBL Model, Demonstration Method, Prior Knowledge, Achievement In Learning English*

INTRODUCTION

In the era of globalization, education is an important need for every human being, state and government. Renewal for the sake of renewal is always sought so that education can really make a significant contribution in efforts to educate the nation's life (Susanto & Hisyam, 2010). SISDIKNAS Law No. 20 of 2003 states that the purpose of national education is to develop the potential of students to become human beings who believe and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become citizens who are democratic and responsible. The goals of educational institutions need to be directed towards graduates who are independent, meaning that the goals of education are not solely self-adjustment, but also increasing the ability and willingness to change society towards a better life (Sadia, 2007).

However, in reality the quality of education in Indonesia is still far from expectations. The quality of education is the estuary of the quality of learning. Formal learning in schools is still not optimal, including learning English. Less optimal learning arises because of the problems experienced in the learning process. Until now, the problems that hit the world of education, especially in learning English, are efforts to develop conceptual understanding and improve student achievement. This is caused by teachers who in the learning process rarely associate the concepts or material being taught with real life and rarely direct students to connect the knowledge they have with the application of the concepts being taught.

The learning method that is currently still widely used by teachers in elementary schools is the demonstration method. According to (Dela Delviana, 2022; Rohana, 2022; Sunartini, 2022) says that the demonstration method is the assimilation of information with the following characteristics: (1) obtaining information, (2) organizing information into general principles in specific cases, and applying general principles in new circumstances. (Eneng Sri Anisa Widodo & Muzhir Ihsan, 2022; Patent, 2022; Sriyani & Sukadari, 2022) says that the demonstration method is the most efficient method in teaching which is rote (memory).

From these two opinions, it appears that the demonstration method is teacher-cantered learning. Teachers are active while students are passive. There is no opportunity for students to express their opinions and creativity. Activities like this are of course boring and reduce the enthusiasm of students to learn. The application of the demonstration method is characterized by the presentation of experiences related to the concept to be studied. Then the teacher provides information to students, followed by questions and answers, giving assignments, until in the end the teacher feels that what has been taught can be understood by students. Students are not given the opportunity to exchange ideas, so students only receive information or concepts without a clear understanding of those concepts.

This is the kind of problem that must be solved now. Teachers must be able to find learning models that can activate students. The teacher must find the best way to

convey the various concepts that have been taught so that students can understand deeply the concepts they have and then solve problems related to these concepts. The role of the teacher here is how the teacher can use learning models related to how to solve problems.

Another factor that must be considered in learning English is students' initial knowledge (Ahmad, 2012). The initial knowledge of students is one of the important roles in the smooth running of a learning activity because it describes the readiness of students in receiving the lessons to be delivered. Initial knowledge is often considered the same by teachers even though in reality this is not necessarily the case. According to (Prihanto & Hawanti, 2021; Utami, 2020), Prior knowledge has the greatest impact on learning. Those with good prior knowledge can learn better. According to (Rohana, 2022; Yulianti & Yulianti, 2021), initial knowledge is a learning achievement that is obtained before obtaining higher knowledge. The initial knowledge of students is important for the teacher to know before starting learning, because in this way it can be seen whether students already have initial knowledge which is a prerequisite for participating in learning, students know what material will be presented (Marfilinda, 2019; Meilani, 2020). Good input is expected to produce good output as well, so having adequate initial knowledge will greatly support the learning process and in achieving English learning achievement. Researchers predict prior knowledge will also influence learning achievement so that researchers choose prior knowledge as a moderator variable.

According to (Gunawan et al., 2022; Rahmadani & Taufina, 2020; Saad & Zainudin, 2022) the PBL model is a learning model based on many problems that require authentic investigation, namely investigations that require real solutions to real problems. From examples of real problems, students are expected to be able to solve these problems by using concepts that have been previously owned. So that students understand the concept and not just memorize the concept.

RESEARCH METHODS

The type of research conducted included the experimental research design model with two groups of subjects who were determined in total based on the learning model given to the subjects. This is done in order to obtain significant results in terms of the learning process using the PBL Model and the Demonstration method and prior knowledge of student achievement. So that the temporary assumption that the use of the two learning model approaches has an effect on learning achievement can be controlled by research design.

With this research design model, answers to the hypotheses that have been proposed will be obtained. The research design can be described in the following table

Table 1. Research design

No	Group	Pre Test	Treatment	Post Test
1	Treatment I	Y l	PBL models	Y2
2	Treatment 2	Y1	Demonstration method	Y2

Description:

Y 1 = Pre-Test Score
Y2 = Post Test Score

The population used in this study were 380 students of class VII SMPN 48 Surabaya. For more details, the population and research sample are presented in the following table.

Table 2. Population and Sample

No	School name	Class	Sample	Technique
1	SMPN 48 Surabaya	VII ABC	95	*Random Sampling*
2	SMPN 48 Surabaya	VII DEF	99	*Random Sampling*
		total	194	

Data collection methods that are often used in social research, including education are: (1) Questionnaire or questionnaire method; (2) interview method; (3) observation method; (4) documentary method; and (5) test method. After the prerequisite test was carried out, then a two-way Anava test was carried out (Sugiyono, 2017), in explaining the hypothesis the next calculation used the statistical program SPSS version 25.0

RESEARCH RESULT

Overall statistical descriptive data regarding learning methods, prior knowledge, and learning achievement can be seen in the following table.

Table 3. Descriptive Statistics

Between-Subjects Factors

		Value Label	N
METHOD	1.00	PBL MODEL	95
	2.00	DEMONSTRATION METHOD	99
PRELIMINARY KNOWLEDGE	1.00	High	79
	2.00	Low	115

Table 4. Descriptive Statistics

Descriptive Statistics

Dependent Variable: LEARNING ACHIEVEMENT

METHOD	PRELIMINARY KNOWLEDGE	Mean	Std. Deviation	N
PBL MODEL	High	68.9623	6.30617	53
	Low	76.2857	4.80490	42
	Total	72.2000	6.74079	95
DEMONSTRATION METHOD	High	62.5385	2.00461	26
	Low	62.7534	1.77780	73
	Total	62.6970	1.83200	99
Total	High	66.8481	6.08506	79
	Low	67.6957	7.28875	115
	Total	67.3505	6.82048	194

Statistical data from the SPSS 25 calculation results between learning methods, Prior Knowledge, and learning achievement with a total of 120 students obtained the following results: (1) English learning achievement on the PBL model obtained an average (mean) of 73.0667 and a standard deviation 6.88370. While the demonstration method obtained an average (mean) of 62.5500 and a standard deviation of 18.4506, (2) high initial knowledge in the PBL model obtained N: 36 and low initial knowledge obtained N:24. Whereas high Prior Knowledge in the Demonstration method obtained N.13 and low Prior Knowledge obtained N: 47 and (3) the total results of English learning achievement with high Prior Knowledge obtained N:49 and low Prior Knowledge obtained N:71.

The research hypothesis was tested using two-way analysis of variance. The researcher used SPSS 25 to calculate the two-way analysis of variance test. In SPSS 25 the hypothesis test was obtained from the results of the Tests of Between-Subjects Effects. From the print out in detail we can find out the results of hypothesis testing 1, 2 and 3. A summary of the results of these calculations can be presented in the following table.

Table 5. Two-Way Anava Hypothesis Test Results

Tests of Between-Subjects Effects

Dependent Variable: LEARNING ACHIEVEMENT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5635.646[a]	3	1878.549	106.783	.000
Intercept	771759.358	1	771759.358	43869.391	.000
Method	4199.237	1	4199.237	238.699	.000
preliminary_knowledge	599.210	1	599.210	34.061	.000
Method * preliminary_knowledge	532.812	1	532.812	30.287	.000
Error	3342.519	190	17.592		
Total	888980.000	194			
Corrected Total	8978.165	193			

a. R Squared = .628 (Adjusted R Squared = .622)

Based on table 1 it appears that: (a) In the learning model, the value of sig = 0.000 with a significance level of α = 0.05 and a sig value <0.05 thus H0A is rejected. This means that there is an influence on learning achievement between students who study with the PBL model and the Demonstration method in English subjects, (b) In students' initial knowledge, the value of sig = 0.000 with a significance level of α = 0.05 and sig <0.05 with thus H0A is rejected. This means that there is an effect of learning achievement between students who have high initial knowledge and low prior knowledge, and (c) on student learning interactions, sig = 0.000 with a significance level of α = 0.05 and sig < 0.05 thus H0A is rejected. This means that at a significance level of α = 0.05 there is an interaction between the PBL model and the Demonstration method and prior knowledge of English learning achievement.

The results show that there is a significant interaction between the application of the PBL model and the Demonstration method and prior knowledge on English learning achievement which is also reinforced by Figure 1. as follows:

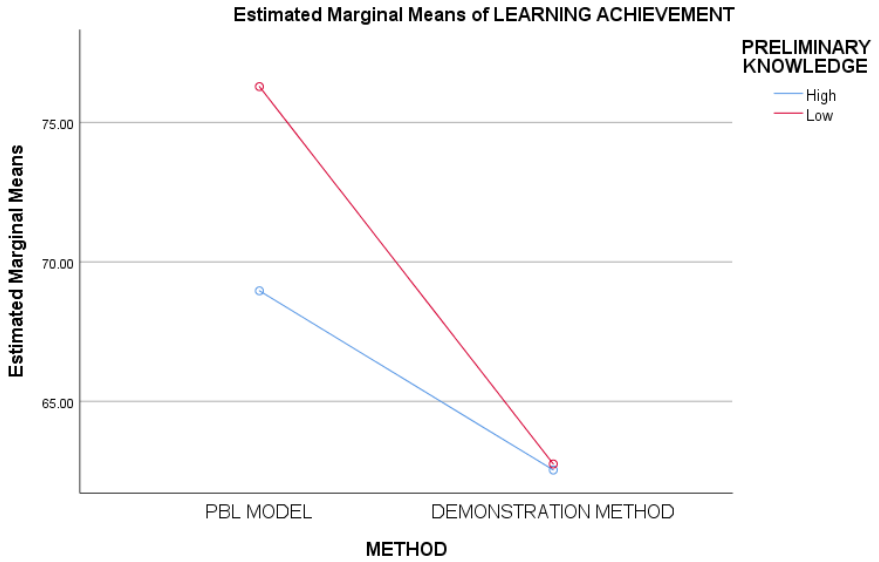

Figure 1. Interaction Between the Application of The PBL Model and The Demonstration Method and Prior Knowledge on English Learning Achievement

DISCUSSION

A. Learning with the PBL Model is more effective than the Demonstration Method

The results of the calculations show that the average learning achievement with the PBL model is 72.2000, while the learning achievement with the demonstration method is 62.6970. Thus, it can be said that learning achievement with the PBL model can show higher learning achievement than learning achievement with the demonstration method.

The calculation results obtained F count = 238.699 while the probability of 0.000 is smaller than the real level of 0.05. Thus, it can be said that there is a difference in learning achievement in the field of English studies between learning using the PBL model and the student demonstration method, accepted at a significance level of 5%.

Learning with the PBL model was developed in the medical field. the PBL model is just a learning strategy that was developed with the aim of making learning run more productively and meaningfully. The PBL model can be implemented without having to change the existing curriculum and arrangements (Darmawan, 2021; Firdaus et al., 2021; Pujiyanti et al., 2021).

One of the philosophies underlying the realistic approach is that art is not a complete set of rules or characteristics that students must learn. the PBL model aims to equip students with knowledge that can be flexibly applied (transferred) from one problem to another and from one context to another (Chen et al., 2021; Gorat & Haryadi, 2020; Putra et al., 2021).. Defining transfer is the ability to think and reason about new

situations through the use of prior knowledge. It can have a positive connotation if learning or problem solving is enhanced through the use of prior knowledge. It can have a negative connotation if prior knowledge significantly interferes with the learning process. Transfer can also occur in a context through giving assignments that are closely related to subject matter, or certain situations, and then used in other contexts.

B. Learning Achievement of the PBL Model and High Initial Knowledge is better than Low Initial Knowledge

The results of the calculation show that learning achievement with PBL model learning and high initial knowledge is an average of 68.9623 while low initial knowledge is an average of 76.2857. Thus, it can be said that learning achievement with PBL model learning and high initial knowledge can show higher learning achievement than knowledge low start.

The calculation results obtained F count = 34,061 while the probability of 0.000 is smaller than the real level of 0.05. Thus, it can be said that there is a difference in learning achievement in the field of English studies between learning with the PBL model between groups of subjects who have high and low initial knowledge of students, accepted at a significance level of 5%.

Several reasons underlie the importance of the tutoring program in schools according to (Hikamah et al., 2021; Intan Rizqi Anjali, 2021; Putri & Taqiudin, 2021), (1) All actions, including the actions of learning English according to the type of action they want to take, students must carry out learning actions, while they are unable to do it well so that results in failure which means it is a loss, both the student concerned and the teacher, parents and society. That is why assistance/guidance on how to carry out learning activities needs to be given to students who need it, (2) Each person, of course, experiences personal problems with different forms and manifestations that may greatly affect him/herself, and can even foster unhealthy mental tendencies. which can hinder him from carrying out activities and achieving success, (3) There is a desire from students to continue their studies to a higher level of education, guidance is needed, and (4) Students who want to work for a company after graduation. Here guidance is needed to prevent personal graduation and also less work productivity which causes losses.

The main purpose of tutoring provided by the teacher is to develop all students' abilities so that they can successfully develop their lives at a more appropriate level or condition. Prior knowledge serves to guide students through the process of providing assistance to individuals and groups so that they are able to adapt well to school, family and society.

According to (Faqihi, 2021; Intan Rizqi Anjali, 2021; Suswati, 2021)one of the repetition techniques is review or reteaching, which means repeating or studying again the material that has been taught with the intention of gaining understanding, broadening or deepening and clarifying the material that has been taught.

C. Interaction between the PBL Model and Prior Knowledge on Learning Achievement

The calculation results obtained F count = 30,287 with a probability value of 0.000 which is smaller than the real level of 0.05. Thus, it can be said that there is an interaction of the PBL model of students who have prior knowledge with the students' English learning achievement.

The PBL model aims to equip students with knowledge that can be flexibly applied (transferred) from one problem to another and from one context to another. Defining transfer is the ability to think and reason about new situations through the use of prior knowledge. It can have a positive connotation if learning or problem solving is enhanced through the use of prior knowledge. It can have a negative connotation if prior knowledge significantly interferes with the learning process. Transfer can also occur in a context through giving assignments that are closely related to subject matter, or certain situations, and then used in other contexts.

If PBM learning is applied with high initial knowledge it will be able to increase learning achievement. This is reinforced by the opinion of (Hamid et al., 2021; Liu et al., 2022; Pusparini & Widyanarko, 2022), namely: In order for learning to occur, students must take action on the new information and link the new information with prior knowledge, namely with a coding process strategy which is often called a repeating strategy.

From the opinion above, it can be concluded that in order for learning to occur which can improve learning achievement, it is necessary to have a real approach, namely the PBL model. The results of the research show that the process of learning contextual English has shown satisfactory results.

CONCLUSION

Based on the research, the following results were obtained: (1) There were differences in learning achievement in the English study field between learning using the PBL model and the Student demonstration method, (2) There were differences in learning achievement in the English study field between learning with the PBL model between groups of subjects who had knowledge Students have high and low initial knowledge, and (3) There is an interaction between students who have high and low initial knowledge of the PBL model learning with demonstration method learning of students who have high and low initial knowledge of learning towards students' English learning achievement. Based on the results of this study, it was concluded that using the PBL model and prior knowledge could improve student achievement. The implication of this research is that the PBL model can be used as a way to improve students' English learning achievement.

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