

PROBLEM-BASED LEARNING APPLICATION ON ENGLISH ESSAY WRITING CLASS

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INFO ARTIKEL	ABSTRAK
Riwayat Artikel : Diterima: 29- 06-2024 Disetujui: 30- 07-2024 Kata Kunci : Masalah; Penilaian Produk; Penilaian Proses; Kemampuan Menulis.	Penelitian ini dirancang untuk menemukan pengaruh daripada penerapan pembelajaran berbasis masalah (problem-based learning) terhadap kemampuan mahasiswa didalam menulis essai. Penelitian ini merupakan eksperimen yang dalam pengolahan datanya menggunakan analisa kuantitatif. Subjek yang diteliti adalah mahasiswa semester 5 T.A 2022/2023 FKIP Universitas HKBP Nommensen Pematangsiantar. Sampel yang digunakan masing-masing 40 mahasiswa untuk kelas eksperimen dan kelas kontrol. Instrumen yang digunakan didalam penelitian ini adalah tes essai. Hasil penelitian membuktikan bahwa pembelajaran berbasis masalah dapat meningkatkan kemampuan siswa dalam menulis essai. Hal ini dapat dilihat dari hasil uji t (9.38) lebih besar daripada tabel t (2.68) pada level signifikansi 0.05. Dengan menerapkan pembelajaran berbasis masalah, mahasiswa sangat terbantu dalam menuangkan ide-ide yang terorganisir didalam tulisan.

ARTICLE INFO	ABSTRACT
Article History : Received : 29-06-2024 Accepted : 30-07-2024 Keywords: Problem; Product Assessment; Process Assessment; Writing Ability.	<i>This research was designed to find the effect of implementing problem-based learning on students' ability to write essays. This research is an experiment which uses quantitative analysis to process the data. The subjects studied were students in the 5th semester of 5 2022/2023, FKIP, HKBP Nommensen University, Pematangsiantar. The samples used were 40 students each for the experimental class and control class. The instrument used in this research was an essay test. The research results prove that problem-based learning can improve students' ability to write essays. This can be seen from the results of the t test (9.38) which is greater than the t table (2.68) at the significance level of 0.05. By implementing problem-based learning, students are greatly helped in expressing organized ideas in writing.</i>

INTRODUCTION

Problem-based learning (PBL) was firstly introduced in the medical school program at McMaster University in Hamilton, Ontario, Canada in the late 1960s by Howard Barrows and his colleagues. The PBL curriculum was developed in order to stimulate the learners, assist the learners in seeing the relevance of learning to future roles, maintain a higher level of motivation towards learning, and to show the learners the importance of responsible, professional attitudes. There were, at least,

three major factors that initiated the implementation of PBL in the medical education at McMaster University: (1) the dissatisfaction of the learners with the education, (2) the irrelevance of the learned information to the professional practice, and (3) the learners' lack of reasoning ability to apply what they have learned to solve problems at the work place (Barrows, 1996). Problem-based learning has subsequently been adopted by other medical school programs, adapted for undergraduate instruction, as well as K-12 (kindergarten to 12 years of basic education). The use of PBL has expanded from its initial introduction into medical school programs to include education in the areas of other health sciences, math, law, education, economics, business, social studies, and engineering. The use of PBL, like other student-centered pedagogies, has been motivated by recognition of the failures of traditional instruction, and the emergence of deeper understandings of how people learn. Unlike traditional instruction, PBL actively engages the student in constructing knowledge. PBL includes problems that can be solved in many different ways and have more than one solution. However, in the field of language teaching and learning, the use of PBL is relatively new. It has been introduced with the desire to integrate language and content study to facilitate autonomous learning. In this model, a group of students are given a problem to solve in their field of study, prepare a report, and present the results in the class. The idea to use PBL in language learning was developed by a Leonardo da Vinci pilot project for the year 1999/2000 entitled Teaching English for Technical Purposes—TENTEC. The results of the project showed that was especially appropriate for teaching languages across the curriculum for some reason. Firstly, there is the question of motivation. ESP (English for Specific Purposes) teachers sometimes find it difficult to motivate their technically or professionally oriented students for language learning. Even carefully designed curricula, which follow needs analysis, do not always meet the real interests of young student population. Updated textbooks soon become boring and obsolete since new information is easily accessible on the internet. So, a real-life problem raises motivation. Secondly, and closely connected with the question of motivation, is the significance of teaching languages across the curriculum. Languages at tertiary level are often treated as second-rate subjects. This situation is reflected in students' attitude towards language as a faculty subject which they consider a necessary evil but not linked to what they believe to be their genuine study program. This situation can be changed. Working closely with subject teachers, language specialist becomes involved with the faculty programs, while the students feel they can combine their professional knowledge and their knowledge of language (Gvardjancic, 2001). As one of the lecturers of writing course in Teacher Training Faculty of Nommensen University, the researcher has observed the design of curriculum for writing course and the teaching and learning process, and assumed that most of the students were failed in writing for they did not know what topic to be written and how to start the writing. This happened merely because they had no motivation in writing. The teaching-learning process was monotonous in which the lecturers provided them information about writing, gave many examples, and assigned homework. But the students were still incapable in writing an essay by themselves. They were not introduced firstly with some problems as ideas for writing. Those problems can be a trigger for them to write. Based on those realities, the researcher intended to conduct an experimental research on "The Effect of Applying Problem Based Learning on the Students' Ability in Writing Essay at FKIP Universitas HKBP Pematangsiantar".

METHOD

This research was an experimental study. According to Ary, et.al (1979), an experiment is a scientific investigation in which the researcher manipulates one or more independent variables, control any other relevant variables, and observe the effect of manipulation on the dependent variable(s). The goal of experimental research is to determine whether a causal relationship exist between two or more variables. The experimental group receives specific treatment while control group receives no treatment. Using a control group enables researcher to see many explanations for the effect of treatment. This research was conducted from November to December 2022. Its location was Faculty of Teacher Training and Education (FKIP) Nommensen University Pematangsiantar. The population of this study was the fifth semester students of teacher training faculty of Nommensen University

Pematangsiantar. There were about 336 students of the fifth semester. They are divided into 9 groups. The researcher chose 2 groups (group A and B) as the sample of this research. Each group (experimental and control group) consisted of 40 students. So, there were 80 students as the sample of this research. The instrument used was writing essay test. There were two tests: pre-test and post-test. Both in pre-test and post-test, the students were asked to write an essay (free writing). Below is the table of topics the students should choose for their writing test. The problems for each topic were provided for experimental group.

TOPICS	PROBLEMS
Free Education	Where can free education be found? How do the government and schools determine and manage the policy, procedures, and financial issues? What is (are) the advantage(s) and disadvantage(s) of applying free education? Do you agree or not if free education is applied in your area? What is (are) your specific reason(s)? Do you have any suggestions related to this issue?
e-Learning	What is e-learning? What are the types of e-learning? What types of e-learning had you encountered? How do you compare e-learning model to conventional model from your experiences? What suggestions can you propose to the instructors, teachers, or lecturers who applied e-learning?
Direct Elections for Local Heads	What it is meant by direct election? When was direct election conducted firstly in Indonesia? Why do the House of Representatives suddenly propose an amendment to the Legislative Institution Law (MD3)? Which one do you choose: election by the people of Indonesia or the House of Representatives? What reasons do you have?
Corruption Eradication Commission (KPK)	What background underlies the establishment of Corruption Eradication Commission (KPK) in Indonesia? What duties and functions does KPK have? List all of the chairmen of KPK since its establishment. Provide their achievements during their leadership. Do all of people of Indonesia agree to this establishment? Provide its evidences. According to your point of view, do you think our country needs KPK? State your reasons.
Forest Fires	Where do forest fires frequently occur in Indonesia? Why did the doers do such illegal activity? How does it threaten the people's health and disrupt people's activities? What action(s) had our government taken to control and prevent this action? What is (are) your argument(s) related to this newly illegal habit? Why do you say so? Do you have any suggestions to our government?

This research occupied three procedures for both experimental and control group. In the experimental group, the researcher firstly gave a pre-test (writing an essay). Then a treatment was conducted where the students were introduced with some problems. After that, the researcher gave post-test to the students in form of writing an essay. In control group, the pre-test and post-test were similarly conducted as in experimental group. The difference was that in control group the treatment was not conducted by applying PBL, but a conventional model (3P: Presentation, Practice, and Product). In order to check whether the difference between pre-test and post-test is significant or not, this research used analysis of t. It is also used to test the hypothesis.

$$t_{\text{obs}} = \frac{M_x - M_y}{\sqrt{\left(\frac{dx^2 + dy^2}{|N_x + N_y| - 2} \right) \left(\frac{1}{N_x} + \frac{1}{N_y} \right)}}$$

RESULT AND DISCUSSION

Data Analysis on Experimental Group

No	Reg. Number	X	Y	X ²	Y ²	XY	x	x ²
1	12120140	60	75	3600	5625	4500	15	225
2	12120141	70	80	4900	6400	5600	10	100
3	12120142	65	70	4225	4900	4550	5	25
4	12120144	70	85	4900	7225	5950	15	225
5	12120145	60	75	3600	5625	4500	15	225
6	12120146	65	75	4225	5625	4875	10	100
7	12120147	60	70	3600	4900	4200	10	100
8	12120148	50	70	2500	4900	3500	20	400
9	12120149	65	75	4225	5625	4875	10	100
10	12120150	65	70	4225	4900	4550	5	25
11	12120151	65	70	4225	4900	4550	5	25
12	12120152	75	90	5625	8100	6750	15	225
13	12120153	70	75	4900	5625	5250	5	25
14	12120155	65	75	4225	5625	4875	10	100
15	12120156	70	85	4900	7225	5950	15	225
16	12120157	70	80	4900	6400	5600	10	100
17	12120158	70	75	4900	5625	5250	5	25
18	12120160	65	70	4225	4900	4550	5	25
19	12120161	75	80	5625	6400	6000	5	25
20	12120162	70	85	4900	7225	5950	15	225
21	12120164	65	75	4225	5625	4875	10	100
22	12120166	60	70	3600	4900	4200	10	100
23	12120167	65	75	4225	5625	4875	10	100
24	12120169	60	65	3600	4225	3900	5	25
25	12120170	70	75	4900	5625	5250	5	25
26	12120171	60	75	3600	5625	4500	15	225
27	12120172	75	85	5625	7225	6375	10	100
28	12120173	70	85	4900	7225	5950	15	225
29	12120174	60	70	3600	4900	4200	10	100
30	12120175	55	60	3025	3600	3300	5	25
31	12120176	55	65	3025	4225	3575	10	100
32	12120177	60	70	3600	4900	4200	10	100

33	12120178	70	75	4900	5625	5250	5	25
34	12120179	75	85	5625	7225	6375	10	100
35	12120181	60	70	3600	4900	4200	10	100
36	12120182	60	75	3600	5625	4500	15	225
37	12120183	55	65	3025	4225	3575	10	100
38	12120184	55	60	3025	3600	3300	5	25
39	12120185	65	75	4225	5625	4875	10	100
40	12120186	65	75	4225	5625	4875	10	100
	SUM (Σ)	2585	2980	168575	223900	193975	395	4525

$$M_x = \frac{\sum X}{N} = \frac{2585}{40} = 64.63$$

$$M_y = \frac{\sum Y}{N} = \frac{2980}{40} = 74.50$$

$$SD = \frac{1}{N} \sqrt{N(\sum X^2) - (\sum X)^2}$$

$$SD = \frac{1}{40} \sqrt{40(168575) - (2585)^2}$$

$$SD = \frac{1}{40} \sqrt{6743000 - 6682225}$$

$$SD = \frac{1}{40} \sqrt{60775}$$

$$SD = \frac{1}{40} (246.52)$$

$$SD = 6.16$$

Data Analysis on Control Group

No	Reg. Number	X	Y	X ²	Y ²	XY	y	y ²
1	12120046	60	70	3600	4900	4200	10	100
2	12120048	60	65	3600	4225	3900	5	25
3	12120050	60	70	3600	4900	4200	10	100
4	12120051	70	80	4900	6400	5600	10	100
5	12120052	60	65	3600	4225	3900	5	25
6	12120053	65	70	4225	4900	4550	5	25
7	12120054	65	70	4225	4900	4550	5	25
8	12120057	70	80	4900	6400	5600	10	100
9	12120058	65	70	4225	4900	4550	5	25
10	12120059	65	70	4225	4900	4550	5	25
11	12120060	60	65	3600	4225	3900	5	25
12	12120061	65	70	4225	4900	4550	5	25
13	12120062	65	75	4225	5625	4875	10	100
14	12120063	65	70	4225	4900	4550	5	25
15	12120065	60	75	3600	5625	4500	15	225
16	12120066	60	65	3600	4225	3900	5	25
17	12120067	70	75	4900	5625	5250	5	25

18	12120068	60	75	3600	5625	4500	15	225
19	12120069	60	75	3600	5625	4500	15	225
20	12120070	55	70	3025	4900	3850	15	225
21	12120071	60	75	3600	5625	4500	15	225
22	12120072	60	65	3600	4225	3900	5	25
23	12120073	60	65	3600	4225	3900	5	25
24	12120074	60	65	3600	4225	3900	5	25
25	12120075	60	75	3600	5625	4500	15	225
26	12120076	60	70	3600	4900	4200	10	100
27	12120077	50	65	2500	4225	3250	15	225
28	12120078	60	65	3600	4225	3900	5	25
29	12120080	55	70	3025	4900	3850	15	225
30	12120082	65	70	4225	4900	4550	5	25
31	12120083	60	65	3600	4225	3900	5	25
32	12120085	60	65	3600	4225	3900	5	25
33	12120086	60	80	3600	6400	4800	20	400
34	12120087	70	75	4900	5625	5250	5	25
35	12120088	60	70	3600	4900	4200	10	100
36	12120090	60	65	3600	4225	3900	5	25
37	12120091	50	60	2500	3600	3000	10	100
38	12120092	50	65	2500	4225	3250	15	225
39	12120093	50	65	2500	4225	3250	15	225
40	12120094	60	75	3600	5625	4500	15	225
	SUM (Σ)	2430	2795	148650	196275	170375	365	4175

$$M_X = \frac{\sum X}{N} = \frac{2430}{40} = 60.75$$

$$M_Y = \frac{\sum Y}{N} = \frac{2795}{40} = 69.88$$

$$SD = \frac{1}{N} \sqrt{N (\sum X^2) - (\sum X)^2}$$

$$SD = \frac{1}{40} \sqrt{40(148650) - (2430)^2}$$

$$SD = \frac{1}{40} \sqrt{5946000 - 5904900}$$

$$SD = \frac{1}{40} \sqrt{41100}$$

$$SD = \frac{1}{40} (202.73)$$

$$SD = 5.07$$

Analyzing the Data by using t -Test Formula

$$t = \frac{m_x - m_y}{\sqrt{\left(\frac{\sum x^2 + \sum y^2}{N_x + N_y - 2}\right) \left(\frac{1}{N_x} + \frac{1}{N_y}\right)}}$$

$$t = \frac{9.88 - 9.13}{\sqrt{\left(\frac{6.16 + 5.07}{40 + 40 - 2}\right) \left(\frac{1}{40} + \frac{1}{40}\right)}}$$

$$t = \frac{0.75}{\sqrt{\left(\frac{11.23}{78}\right)\left(\frac{2}{40}\right)}}$$

$$t = \frac{0.75}{\sqrt{(0.14)(0.05)}}$$

$$t = \frac{0.75}{\sqrt{0.007}}$$

$$t = \frac{0.75}{0.08}$$

$$t = 9.38$$

After analyzing the data and verifying the hypothesis, then the writer came to the research findings. Based on the writer's work in data analysis of this research, there are several discoveries which are actually found by the writer. They are as the following:

1. By using Problem-based Learning, the students are interested in writing English essay. The problem provided by the researcher had successfully enhanced their motivation in writing. The students' ideas are organized well because of the problems given.
2. The students of experimental group got higher score than the control group. It can be seen from the mean score in post-test where experimental group is 74.50 while the control group is 69.88.
3. It is concluded that the null hypothesis (H_0) was rejected and alternative hypothesis was accepted (H_a). It was shown by the t-test value was 9,38 and the value of t-table was 2.68 at alpha 0,05 and d.b 78 ($n + n - 2 = 40 + 40 - 2$) which means that the use of PBL can enhance the students' ability in writing essay.

CONCLUSION

The researcher concluded that there were some difficulties faced by the students in writing an English essay both in Experimental Class and Control Class. Firstly, most of the students had not known the organization of well-structured essay. Secondly, most of the students found the difficulty in applying appropriate language use and having limited vocabularies. By applying problem-based learning (PBL), the students' essay writings were more organized and the content of their writing were focused on the topic discussed. The students felt more comfortable in writing since the problems given helped them to find more ideas for a better composition.

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