APPLICATION OF PROBLEM-POSING LEARNING MODEL ON ELECTRICAL

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APPLICATION OF PROBLEM-POSING LEARNING MODEL ON ELECTRICAL ENGINEERING SUBJECT IN SMK 2 MAKASSAR

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ABSTRACT

The purpose of this study was to determine: (1) how high is the learning motivation of student with the application of problem posing learning model, (2) how big is the learning outcomes students with problem posing learning model application , (3) the effect of the application of problem posing learning model on motivation of students, (4) the effect of the application of problem posing learning models on the learning outcomes of students. This type of research using a quasi-experimental, with research subjects is consist of 54 students. Data were collected through questionnaires and achievement test and analysed using t-test. The results of this study indicate that: (1) The motivation study of students with learning model application 'problem-posing' higher than conventional learning models. (2) The results of student learning with learning model application problem posing better than conventional learning models. (3) There is the effect of the application of problem posing learning models to motivate student learning. (4) There is the effect of the application of problems posing learning models to the learning outcomes of students.

Keywords: learning outcomes, learning motivation, problem posing

INTRODUCTION

Improving the quality of Human Resources (HR) is the right solution that must be done so that Indonesia able to keep pace with technological developments. Implementation of education following the developments and changes in life became one of the requirements to continue to compete with other countries. Law No. 20/2003 on National Education System states that the national education system must be able to guarantee the equalization of educational opportunities, improving quality and the relevance and efficiency of education management to meet the challenges in accordance with the demands for changes in local, national, and global so it is necessary to reform the education in a planned manner, effective, and sustainable.

The quality of vocational school graduates which have the skills and able to compete in the global competition must be obtained from the implementation of learning in schools that follow the development of science and technology. Permendikbud No. 70 of 2013 explains that: required the improvement of mindset in education in Indonesia. This mindset is, among others: (1) the pattern of the teacher-centered learning process, become a learner-centered learning process, (2) individual learning patterns, becomes a pattern, of group learning, and (3) the pattern of passive learning become critical learning patterns.

However, in the learning process that generally occurs in the classroom is, imparting knowledge regardless of what the actual needs of the learners. Teachers play an active role as a teacher-centered. The level of activeness of learners in the learning process is considerably less, thereby inhibiting the growth of creativity and learning motivation. The mindset of learning yet to occur, so that learners tend to expect information from the teacher,

without trying to dig deeper, the knowledge within themselves.

A change of mindset in the learning has not happened yet, so that learners tend to only expect information from the teacher without trying to dig into, the knowledge that is within them. Djojonegoro (1998) stated that vocational education will be efficient if the teaching methods used, and personal relationships with learners, considering the traits and nature of such learners. This suggests that implementation of learning in schools require teachers to act as a facilitator able to apply the learning model in accordance with the conditions of students and their environment.

Based on the results of the initial survey which conducted to obtain information that the study of students subjects of Electrical Engineering odd semester of 2015/2016 academic year is still low. Recapitulation of the average learning outcomes of students, for class X Electronics Industries, and Audio Video gained an average of 54 with a standard value completeness is 75 and only 38% of students who reached complete value. The observed lack of learning motivation, with learners who do not play an active role in the learning process. Such information, to be considered in choosing a model of learning that can improve motivation and learning outcomes of students. One form of the learning process which oriented towards a broader understanding, ie learning by the problem-posing approach.

Problem posing learning model was developed in 1998 by Lyn D. English, and at the very beginning is applied in mathematics and science (Astra, 2012). According to Sutiarso in Setiawan, et al (2012) problem posing is a term in the English language, as the equivalent he said, used the term 'to formulate the problem' (question) or create problems (question). Problem posing by Brown and Walter in Upu (2003) consists of two aspects, namely accepting and challenging. Meanwhile, Silver (1994); Akay & Boz (2010); Mishra & Iyer (2015) states that problem posing is an activity that occurs when students are involved in formulating the given problem, and also when creating new problems or questions. The Making of a question or granting the problem, aims to explore the specific situation and to find new solutions in the process.

This study uses a problem posing approach with the pre-solution type of posing. In this type students create questions and answers based on the statement given by the teacher. The statement in question as made by teachers, while students create their own questions and answers based on the statement. In the process of creating a question, learners are expected to utilize a variety of resources such as textbooks, modules and the internet.

Their task of submission of questions (problem posing) causes the formation of a more solid understanding of the concept of the self-learners of the material that has been granted. Therefore, students are more interested and challenged independent study or conduct discussions with his friend, so that information is processed in the mind and once it is understood that students can ask questions. Activities that make students more confident, active and creative in shaping the knowledge and ultimately students understanding of the concept of learning materials, become much better.

Based on these descriptions, the researchers tried to apply a model-oriented learning on student-centered, namely the problem-posing approach which expected to improve motivation and learning outcomes of students.

RESEARCH METHOD

This study uses Non-equivalent Control Group Design, involving two groups: an experimental group and a control group that aims to determine the effect of applying problem posing

approach on motivation and learning outcomes of Electrical Engineering students of class X, Study Program of Expertise Electronics Engineering at SMK Negeri 2 Makassar.

The data collection is done by using a test for learning outcomes data, and a questionnaire for data of learning motivation from the students. Data analysis was performed using t-test with a significance value of 0,05.

RESEARCH RESULT

Assessment validity of the learning process conducted by two experts and analyzed descriptively. Validation that is performed covers all aspects and criteria of each instrument. Results of the assessment of the validation of learning process showed an average value of 3,49 with the valid criterion, so that the instrument can be used for research.

The results of the analysis of the motivation of learners in both classes which given different treatment shows that, the class, that is using a problem posing learning models, earned an average of greater learning motivation compared to the conventional learning.

Table 1. Frequency and categorize score of student motivation in learning

Category	Class Experiments		Class Control	
	Freq	%	Freq	%
Very high	19	68	4	15
High	8	29	11	42
Moderate	1	4	11	42
Low	0	0	0	0
Very low	0	0	0	0
Amount	28	100	26	100

Based on Table 1. The distribution of the value of learning motivation of students is in the category of the medium, high and very high. The data shows the distribution of the same category, between an experimental class with a control class, however with the different percentages of each category. Value category of 'medium' on an experimental class as much as 1 (4%) and in the control class as many as 11 people (42%). For high category in the experimental class as many as 8 people (29%) and control classes as many as 11 people (42%). A number of students who earn very high category in the experimental class as many as 19 people (68%), while the control class as many as 4 people (15%).

The data shows that there are differences in the motivation of learners who are taught using problem posing learning model with learners that are taught without using model problem posing. Learners who achieve very high motivation categories as many as 19 people with a percentage of 68% in the experimental class taught using problem posing learning models. As for the control class that is taught without using model problem posing only 4 learners achieve very high category with the percentage of 15%. When it viewed from the average value, the experimental class are at very high category with a score of 121. While the control class at the high category. It is clear that there is the effect of the application of learning model problem posing in increasing the motivation of learners.

Data analysis for the pre-test results shows the distribution of values in the experimental class and control class that are in the poor category. These results indicate that in the experimental class and control class has the same starting capabilities on the subjects of Electrical Engineering, the material of electrochemical cells and transformer.

The value of learning outcomes, from the experimental class for the excellent category as many as eight people (29%) and control class 4 (15%). Categorized good as many as 16 people (57%) in experimental class and 13 people (50%) in control class. And categorized as

Fair as many as 4 students in the experimental class, or by 14%. The number of learners who acquire Fair value category up to 9 people (35% in control class. The data have illustrated that there is a significant difference in learning outcomes between experimental class and control class.

Determination of thoroughness of students in each subject based in Complete Standard Minimum (KKM) set by the school. The KKM for subjects C2 and C3 is 75. Electrical Engineering subjects are subject the Basic Competency Study (DKK) and are included in the category of subject C2 therefore KKM used was 75. The results of the analysis of thoroughness the student, in the post-test results for the experimental class and control class with the KKM 75 can be seen in Table 2 below.

Table 2. Analysis of completeness learning outcomes of students subjects electrical engineering experiment for class and class controls

Value	Category	Class Experiments		Class Controls	
		Freq	%	Freq	%
75-100	Complete	22	79	15	58
0 -74	Not complete	6	21	11	42
Amount		28	100	26	100

The data in Table 2 shows in the experimental class there are 6 students who did not complete or by 21%. As for the control class there are 11 students who did not complete or by 42%. This shows that the study of students in the experimental class is higher compared to the control class.

Test-normality of the data is calculated using the Kolmogorov-Smirnov test. Normality test analysis results are shown in Table 3.

Table 3 Data normality test motivation and learning outcomes of students in the experimental class and control class

α	Normality test	Class Experiments			Class Controls		
		questionnaire	pretest	Posttest	questionnaire	pretest	Posttest
0,05	Kolmogorov-Smirnov	0,062	0,064	0,117	0,200	0,200	0,056
Conclusion	Asymp. Sig (2 tailed) > 0,05	normal distribution of data			normal distribution of data		

Table 4. The Results Of The Analysis Of Homogeneity Test

α	homogeneity test	significance level	Conclusion
0,05	Motivation	0,052	Homogeneity
	Pretest	0,571	Homogeneity
	Postets	0,286	Homogeneity

The results of the normality test showed that the data were normally distributed with the significance > 0,05. While the homogeneity test data is intended to test whether the data obtained homogeneously or not. Data is said to be homogeneous if the level of significance is ≥ 0,05. Test-homogeneity can be presented in Table 4.

Table 5. Hypothe test results motivation of learners in the experimental class and control class

α	Class	N	Mean	t_h	t_t	Sig.
0,05	experiment	28	121	5,544	2,006	0,000
	control	26	104			

The results of t-test analysis showed that the t_h = 5,544 with the 0,000 significance. This shows H_0 rejected, which means an average score of learning motivation of learners in the experimental class exceeds the control class. These results indicate that there is the effect of the application of problem posing learning model, against the learning motivation of learners. Furthermore, after the data proved to be normal and homogeneous, then the t-test performed on the outcome of a pre-test to determine the initial ability of students in the experimental class and control class.

Table 6. Hypothesis test results ability early of learners in the experimental class and control class

α	Class	N	Mean	t_h	t_t	Sig.

0,05	experiment	28	16,57	-0,546	2,006	0,588
	control	26	17,69			

The results of t-test analysis are presented in Table 6. The table shows the results of Sig. (2-tailed) is 0,588, which means greater than 0.05 and t-test results showed value minus (-) which means that much smaller than t table, which means that H0 accepted. This indicates that the initial ability of students in the experimental class and control class in Electrical Engineering subject are the same, so that both classes worthy to be compared.

Table 7. Hypothesis test learning outcomes early of learners in the experimental class and control class

α	Class	N	Mean	t_h	t_t	Sig.
0,05	experiment	28	79,68	2,110	2,006	0,040
	control	26	74,96			

The results of t-test analysis of students after obtaining a different treatment the delivery of material (the post-test) can be seen in Table 7. The table shows th value of 2,110 with the 0,040 significance. The significant value that indicates 0,040, less than 0,05 hence H0 stating that there was no difference in learning outcomes of Electrical Engineering from students who is taught by problem posing learning model, with learners who are taught without ing model problem posing. is rejected. It can also be seen from the difference in the average value obtained by students in the experimental class for 79,68 more than the average obtained by students in the control class, which amounted to 74,96.

The above data shows the value of th is positive and more than tt so that H0 is rejected a l H1 accepted, so that is concluded that there are differences in the application of problem-posing learning models on learning outcomes of students. Results of the ana ysis showed that there was a significant effect of the application of problem posing learning model to an increase in learning outcomes of students in the subject of Electrical Engineering at SMK Negeri 2 Makassar.

DISCUSSION

Proble posing learning is learning that requires students to be active in the learning process. Learners are required to be able to formulate or create questions independently, and then answer it based on material that has been given. This learning model begins with providing materials and initial information to the learners. Based on the material students were asked to create and formulate a question. In making the question, learners are given the opportunity to read and gather information from a variety of sources.

Results of the application of problem-posing learning models causing students to be actively looking for information, in order to add a reference to their knowledge, and assist in making and answering the questions. This has affected the improvement of learning motivation of students in the experimental class. Increased motivation can be seen from the distribution of the categorization of the average value of learner motivation, and the hypothesis test result greater than control class.

The involvement of students in learning by applying problem posing learning model is one indicator of the effectiveness of the learning process. Learners not only receive materials from the teacher but of students also tried to plore and develop independently. So that the learning outcomes of students in the experimen class are higher than control class. It can be viewed from the distribution of the value of learning outcomes of students.

Value distribution and categorization indicate hat the implementation of learning in the experimental class is better in improving the learning outcomes of students of the control class. This occurs because conventional teaching practices lead to the boredom resulting in the ability

of learners to capture the contents of the material presented by the teacher becomes slow and less accessible on the learner. So that students in learning implementation were not actively involved.

Differences in the distribution of categorization and the average value of post-test learning outcomes of the students for the experimental class taught by the application of problem posing learning models are in the category of fair, good, and excellent. The data showed an increase in student learning outcomes significantly in the experimental class, so it can be said that problem posing approach, have a good effect on the learning outcomes of students in the subject of Electrical Engineering.

Differences in learning motivation of students taught by problem posing learning model, with the conventional learning model can be seen from the difference in the average obtained from these two classes. Thus, it was concluded that there was an effect of the application of problem-posing learning modelson the motivation of student learning.

These results are consistent with research conducted by Astra, et al. (2012) which states that problem posing learning models increased the activity of students in learning activities. With the application of the model problem posing students encouraged to make a maximum effort and enthusiasm in working on practice questions of physics, which is given so as to improve the learning outcomes of students. The same study conducted by Wulandari (2013) which states that application of learning models problem posing can increase learning motivation of students characterized by increased activity and learning outcomes in learning.

Effect of problem posing learning models on the learning outcomes of students after being applied to the experimental class, and the application of conventional learning in the class control, it can be seen real differences of learning outcomes obtained in both classes.

The implementation of different treatment in submitting and presenting the material to learners, which is in the experimental class students make and answer the question itself not as a test, but as a model of learning in order to make students active in the learning process. The demand to create the questions and at the same time make the answer, making students active in seeking a variety of sources and references to meet the demands of the learning. So that learner is motivated by their opinions and ideas, so that teachers are less able to analyze the difficulties of students to absorb the subject matter. This shows that the problem formulation at the fourth order, in this study have been answered, that there is an effect of the application ofproblem-posing learning modelson learning outcomes of students.

The results are consistent with the research conducted by Irawati (2014) found that the problem posing models, can be more effective to improve learning outcomes and the understanding of high-level learning outcomes of students compared to the problem-solving. Syamsi & Hariyadi (2012), which implementing SSCS strategy, on learning problem posing in his research found that learning outcomes of students are significantly better than using conventional learning models. Similarly, problem posing effect on the ability to think creatively and learning outcomes (Hafsanuddin, et al 2014) which found that the interaction of students in the posing problem learning model able to affect the ability to think creatively and learning outcomes of students.

Based on the description above it can be seen that the use of problem posing learning model, giving effect to the motivation and learning outcomes of students. However, in practice there are some obstacles and constraints encountered. The obstacles which include the time required by learners is very long,

in an effort to make and answer the question, in accordance with a given task. Such a long period of time which is needed by learners is because they need more time to understand the material before making the questions and answer them.

In addition, questions prepared by students, is less systematic and limited to the mastery of the language by learners and sometimes that emerged was not a question but a statement. Another obstacle that arises is, the likelihood of the same questions made by learners. However, the implementation of learning with the use of problem posing attract enough learners in the learning process.

These results provide feedback to teachers in order to provide an alternative model of learning for learners to overcome the boredom of learning that may be experienced while continuing to use the same teaching methods. As expressed by Siregar & Nara (2014) that the dynamics the learning process will greatly affect the learning motivation of student learning. By conducting variation in learning activities, expected that the learning process can be more meaningful and more optimal.

CONCLUSION

1. Learning Motivation of student with the application of learning models problem posing achieve very high category.
2. Student learning outcomes with the application of learning models problem posing achieve very good category.
3. There is an effect of the application of learning models problem posing on the motivation of student learning.
4. There is an effect of application of learning models problem posing to the study outcomes of students.

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BIBLIOGRAPHY

Akay, H. & Boz N. 2010. The Effect of Problem Posing Oriented Analyses-II Course On The Attitude Toward Mathematics and Mathematics Self-Efficacy of Elementary Prospective Mathematics Teachers. *Australian Journal of Teacher Education*, (*Online*), Vol. 35 Issue 1. (http://ro.ecu.edu.au/cgi/viewcontent.cgi?article=1329 & context =ajte, Diakses tanggal 26 Januari 2016).

Astra, I. M., Umiatin & Jannah, M. 2012. Pengaruh Model Pembelajaran Problem Posing Tipe Pre-Solution Posing Terhadap hasil Belajar Fisika dan Karakter Siswa SMA. *Jurnal Pendidikan Fisika Indonesia,* (*Online*), ISSN: 1693-1246. (http://journal.unnes.ac.id/artikel_nju/JPFI/2153. Diakses tanggal 2 Februari 2016).

Djojonegoro, Wardiman.1998. Pengembangan sumber daya manusia melalui Sekolah Menengah Kejuruan (SMK). Jakarta: PT.Jayakarta Agung Offset.

Hafsanuddin, I., Abdurrahman & Nyeneng, I. D. P. 2014. Pengaruh model pembelajaran problem posing terhadap kemampuan berfikir kreatif dan hasil belajar. *Pendidikan Fisika FKIP Unila*, (*Online*),Vol. 2, No. 6 (http://jurnal.fkip.unila.ac.id/

index.php/JPF/article/view/5938/3674Diakses tanggal 26 Januari 2016).

Irawati, R. K. 2014. Pengaruh Model Problem Solving dan Problem Posing serta Kemampuan Awal terhadap Hasil Belajar Siswa. *Jurnal Pendidikan Sains. Pendidikan Kimia Universitas Negeri Malang*, (*Online*), Vol. 2 No. 4, ISSN: 2338-9117.

Mishra, S. & Iyer S. 2015. An exploration of problem posing-based activities as an assessment tool and as an instructional strategy. Research and Practice in Technology Enchanced Learning. A Springer Open Journal, (Online), DOI 10.1007/s41039-015-0006-0. (http://www.it.iitb.ac.in/~sri/papers/ problem Posing - rptel 2015. pdf. Diakses tanggal 28 Januari 2016).

Permendikbud No. 70 Tahun 2013 Tentang Kerangka Dasar dan Struktur Kurikulum Sekolah Menengah Kejuruan/Madrasah Aliyah Kejuruan.

Setiawan, E. N., Prihandono, T., & Nuriman. 2012. Pengaruh Model Problem Posing Tipe Semi Terstruktur dalam Pembelajaran Fisika Kelas XI IPA di SMA Negeri 3 Jember. Jurnal Pembelajaran Fisika, (Online), Volume1, Nomor 3. ISSN:2301-9794.

Silver, E. A. 1994. On Mathematical Problem Posing (For the Learning of Mathematics). British Columbia, Canada: FLM Publishing Association, Vancouver, (Online),. (http://www.jstor.org/stable/40248099?seq=1#page_scan_tab_contents. Diakses tanggal 25 Januari 2016).

Siregar, E. & Nara, H. 2014. Teori Belajar dan Pembelajaran. Bogor: Ghalia Indonesia.

Syamsi, Nur & Eko H. 2012. Pengaruh Model Pembelajaran Problem Posing dengan Strategi Search, Solve, Create, Share Terhadap Hasil Belajar Siswa. Jurnal Penelitian Pendidikan. Vol. 01 No. 1, Tahun 2012, 0-7. (http://ejournal.unesa.ac. id/ index. php/ jurnal - pendidikan - teknik - elektro/ article/ view/ 464/ 865. Diakses tanggal 2 Februari 2016).

Undang-undang No. 20 Tahun 2003 Tentang Sistem Pendidikan Nasional

Upu, Hamzah. 2003. Problem Posing dan Problem Solving pada Pembelajaran matematika. Bandung: Pustaka Ramadhan.

Wulandari, Laksmi. 2013. Penerapan Model Problem Posing dengan Metode Tugas Terstruktur dalam Pembelajaran Fisika di SMA [Online]. Tersedia : http://library.unej.ac.id/client/en_US/default/search/asset/559?dt=list[25 Mei 2014].

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