**THE EFFECT OF PROBLEM-BASED LEARNING MODEL OF FOOD CUTTING COMPETENCY TOWARD THE STUDENT LEARNING OUTCOMES OF CLASS X AT SMKP YPM 2 TAMAN IN SIDOARJO, BASED ON THE LEARNING MOTIVATION**

**Abstract**

This research aims to: (1) analyze the student learning outcomes using the problem-based learning model, compare to the student learning outcomes using the direct learning model; (2) analyze the student learning outcomes that have a high level of learning motivation, compare to the student learning outcomes that have a low level of learning motivation; and (3) analyze the interaction between the learning model and the level of learning motivation towards the learning outcomes.

The type of this research is experimental research that is the factorial design. The research population is all of the students in this competence. Therefore, the research samples are the students of Class X of Culinary Art 1 as the experimental class and the students of Class X of Culinary Art 2 as the control class. The researcher analyzed the data using the analysis of variance (ANOVA) two-line after accomplishing the normality and homogeneity test requirement.

Based on the result of hypothesis test using ANOVA technique, the researcher found that: (1) the student learning outcomes of cognitive, affective and psychomotor aspects using problem-based learning model was significantly higher than the student learning outcomes using the direct learning model; (2) the student learning outcomes of cognitive, affective, and psychomotor aspects that had a high learning motivation was significantly higher than the student learning outcomes that had a low learning motivation; (3) It had the interaction between learning model and learning motivation towards the learning outcomes in the cognitive, affective, and psychomotor aspect.

**Keywords:** *Problem-Based Learning Model, Learning Motivation, Learning Outcomes, Food Cutting.*

**BACKGROUND**

The role of education is necessary to improve the ability of human resources. A state needs human resources to progress a country. Increasing human resources is pursued by perfecting the national education system as one step to get the optimal result.

The educational quality determined three factors, namely the student factor, the outside school factor, and the environmental factor (Hanafiah et al. 2009. p. 81-83). The educational quality determines the effective learning process in the classroom. So that to realize effective education, we need to achieve the appropriate learning goals using the learning method and learning model. Some learning methods that usually use on the research are the direct learning models (DL) and the problem-based learning model (PBL).

Problem-based learning did not design to help the teacher to give information to the student, problem-based learning developed to help the students to develop their critical thinkings, to solve the problems, to develop their intellectual abilities, to learn various roles of adults through their involvement in the real experiences or the simulations and become an autonomous and an independent learner (Ibrahim, 2007, p. 7).

According to Idzhar (2016. P. 222), the teacher occupied a very strategic position to develop the students' potency. As a teacher, the teacher should help the students' development to receive and understand the students so that the students always learn at various times. Finally, the teachers could play their role as a motivator along the teaching and learning process, if the teachers mastered and they could perform their relevant skills in the situation and the condition to the students.

Project-based learning is a learning method using the projects /activities as media. According to Yusoff (2006: 3), Project-based learning was a student-centered approach, strategy, or learning method. Project-based learning was a learning method that increased the abstracts, the tasks to explore the complex problems. Sadirman (2006: 16) argued that the motivation functioned as a driver of business and achievement. A good achievement of learning showed a good result. In other words, the existence of diligent effort, especially the existence of motivation so that it would make someone learn something to get a good achievement.

Based on the preliminary observation, if the researcher uses the direct learning model (DL), it has several competencies that get less than optimal result. The direct learning model also makes the students less sympathetic to the problems that often arise to the cooks when they are cooking in the kitchen. The learning model that has applied so far on the basic competency of food cutting is DL.

The competency which does not get the maximal result is the food cutting. This statement evidences the learning outcomes of some students who get the number under SKM that the researcher observes from the students' results. It is 70% of students who get the number of ≥75. The detail of the number as follows;

Table 1

The Results of the Food Cutting Subject of Class X of Culinary Art 1 and Class X of Culinary Art 2 (2013-2014)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Class X (Cullinary Art) | Score (2014-2015) | | SKM  75 |
| ≤75 | ≥75 |  | |
| 1. | Class X of Culinary Art 1 (35 students) | 20 | 10 | 70,3 | |
| 2. | Class X of Culinary Art 2 (35 students) | 17 | 18 | 71,8 | |

Table 2

The Results of the Food Cutting Subject of Class X of Culinary Art 1 and Class X of Culinary Art 2 (2014-2015)

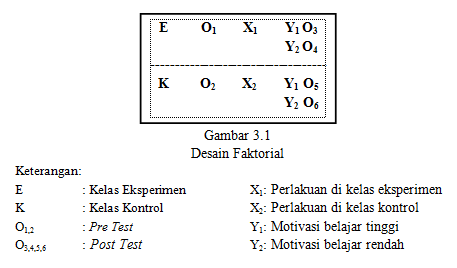
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | Class X (Culinary Art) | Score (2014-2015) | | SKM  75 | |
| ≤75 | ≥75 | |  | |
| 1. | Class X of Culinary Art 1 (35 students) | 13 | 22 | | 70,3 | |
| 2. | Class X of Culinary Art 2 (35 students) | 16 | 19 | | 71,8 | |

The table above showed us the result of Class X of Culinary Art 1 and Class X of Culinary Art 2 at SMKP YPM 2 Taman in 2013-2014. The students at Class X of Culinary Art 1 were 30 students, then the students who received the number of ≤75 were 20 students, 10 students of this class only received the number ≥75. While, Class X of Culinary Art 2 which had the same number of students among the other class, the students who received the number of ≤75 a little more than the other class, that were 17 students, the other students who received the number of ≥75 were 18 students. The result of the student scores ​​in 2013 and 2014 above showed us the scores of the two classes using the direct learning model that were still incomplete.

The table above showed us the result of Class X of Culinary Art 1 and Class X of Culinary Art 2 at SMKP YPM 2 Taman in 2014-2015. The students at Class X of Culinary Art 1 were 35 students. In this class, the students who received the number of ≤75 were 13 students. 22 students of this class only received the number ≥75. While, Class X of Culinary Art 2 which had the same number of students among the other class, the students who received the number of ≤75 a little more than the other class that were 16 students. The other students who received the number of ≥75 were 19 students. The result of the student scores ​​in 2014 and 2015 showed us the scores of the two classes using the direct learning model that were still incomplete. From the results above, it has several obstacles that cause a lack of implementation learning using the direct learning model that is the interview result from the teacher.

**RESEARCH METHOD**

This research uses a type of quasi-experimental research that aims to determine the effect of student learning outcomes of food cutting using the problem-based learning model among the student learning outcomes of food cutting using the direct learning model. The research design is a modification of the quasi-experimental design, namely design factorial. This factorial design prioritized the existence of moderator variables that influenced the treatment (independent variables) toward the learning outcomes (dependent variable) (Sugiyono, 2013, p. 113).



In the design of this research, the researcher used two types of instruments, namely: the questionnaire of student learning motivation and the learning outcomes test. This learning motivation questionnaire was in the form of a Likert scale that was useful to know the student motivation level. The learning outcomes test covered three aspects, namely: cognitive aspect, affective aspect, and psychomotor aspect. Based on the factorial design above, this research divided into two groups, namely (1) Class X of Culinary Art 1 group was the group that taught using a problem-based learning model, and (2) Class X of Culinary Art was the group that taught using the direct learning model.

The analysis techniques in this research includes:

1. Analysis of Prerequisite Test
2. Normality test

The normality test result aims to test whether the score normally distribute or not. This research uses the normality test from Kolmogorov-Smirnov and Shapiro-Wilk. The normality test of cognitive learning outcomes of the experimental class and the control class aims to observe the students' initial abilities.

1. Homogeneity test

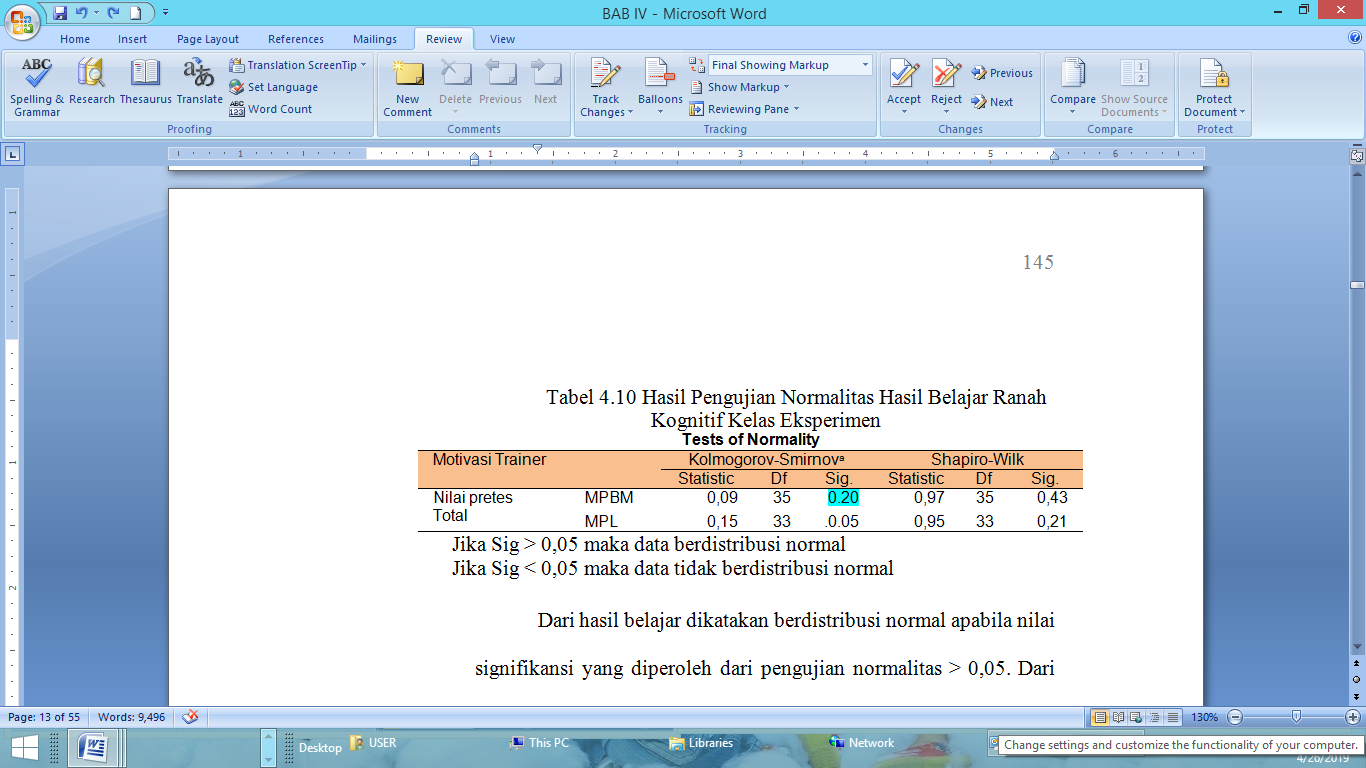
The homogeneity test of the learning outcomes of the experimental class and the control class aims to determine whether or not the variance of the two classes is the same. In this research, the researcher examines the similarity of variance using the Levene Test with SPSS 20 software.

1. Hypothesis Test

The statistical hypothesis value test is the last step to determine whether the temporary result of the formulation problem in the hypothesis research is true or false. In this research, the researcher conducts a hypothesis test using ancova two lines.

**RESULT AND DISCUSSION**

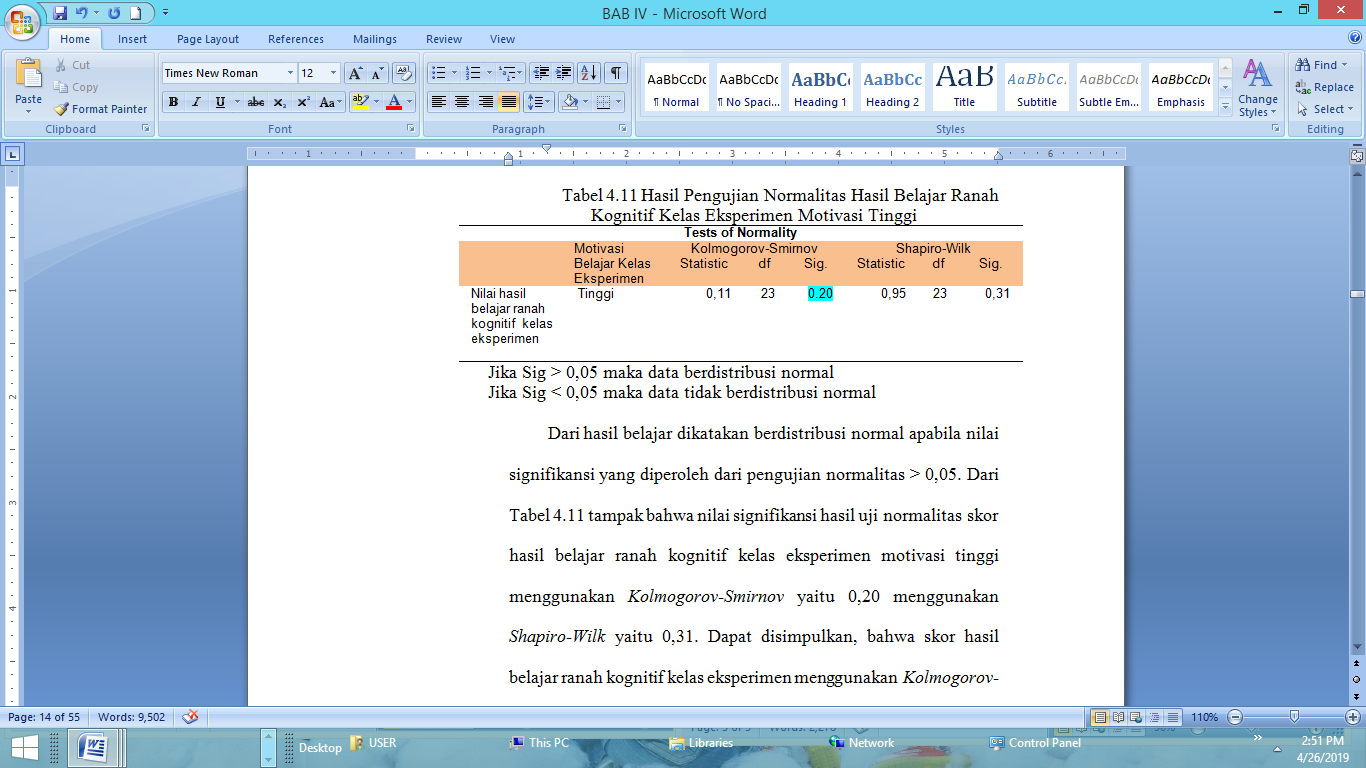
The normality test result aims to examine whether the score normally distribute or not. This research uses the normality test from Kolmogorov-Smirnov. The pretest result of normality test can be seen in Table 3.

Table 3. The Pretest Result of Normality Test

The learning outcomes normally distribute if the number of the significance of the normality test is> 0.05. From Table 3, it shows us that the number of the significance of the normality test result of the cognitive learning outcomes at the experimental class and the control class using Kolmogorov-Smirnov is 0.20 while using Shapiro-Wilk is 0.43. In conclusion, the number of the significance of cognitive learning outcomes at the experimental class and the control class using Kolmogorov-Smirnov is > 0.05.Therefore, the number of cognitive learning outcomes at the experimental class is normally distribution.

The normality test result aims to examine whether the score normally distributes or not. This research uses the normality test from Kolmogorov-Smirnov. The posttest result of the normality test can be seen in Table 4.

Table 4. The Posttest Result of Normality Test

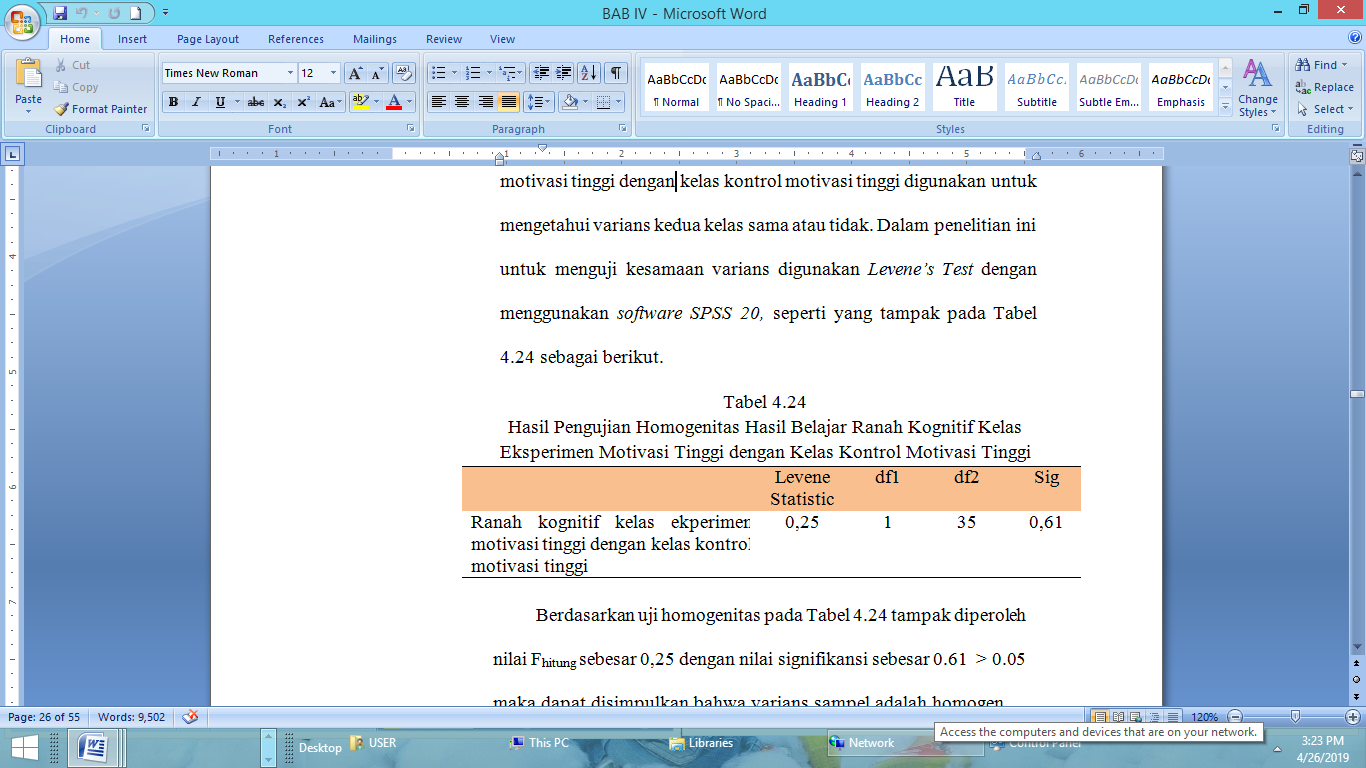


The learning outcomes normally distribute if the number of the significance of the normality test is> 0.05. From Table 4, the number of the significance of the normality test result of the cognitive learning outcomes at the experimental class that has high motivation using Kolmogorov-Smirnov is 0.20 while using Shapiro-Wilk is 0.31. The number of the significance of cognitive learning outcomes at the experimental class using Kolmogorov-Smirnov is > 0.05. Therefore, the number of cognitive learning outcomes that has high motivation at the experimental class is normally distribution.

**Homogeneity Test**

The homogeneity test of the learning outcomes at the experimental class and the control class aims to determine whether or not the variance of the two classes is the same. In this research, the researcher examines the similarity of variance using Levene Test.

Table 5

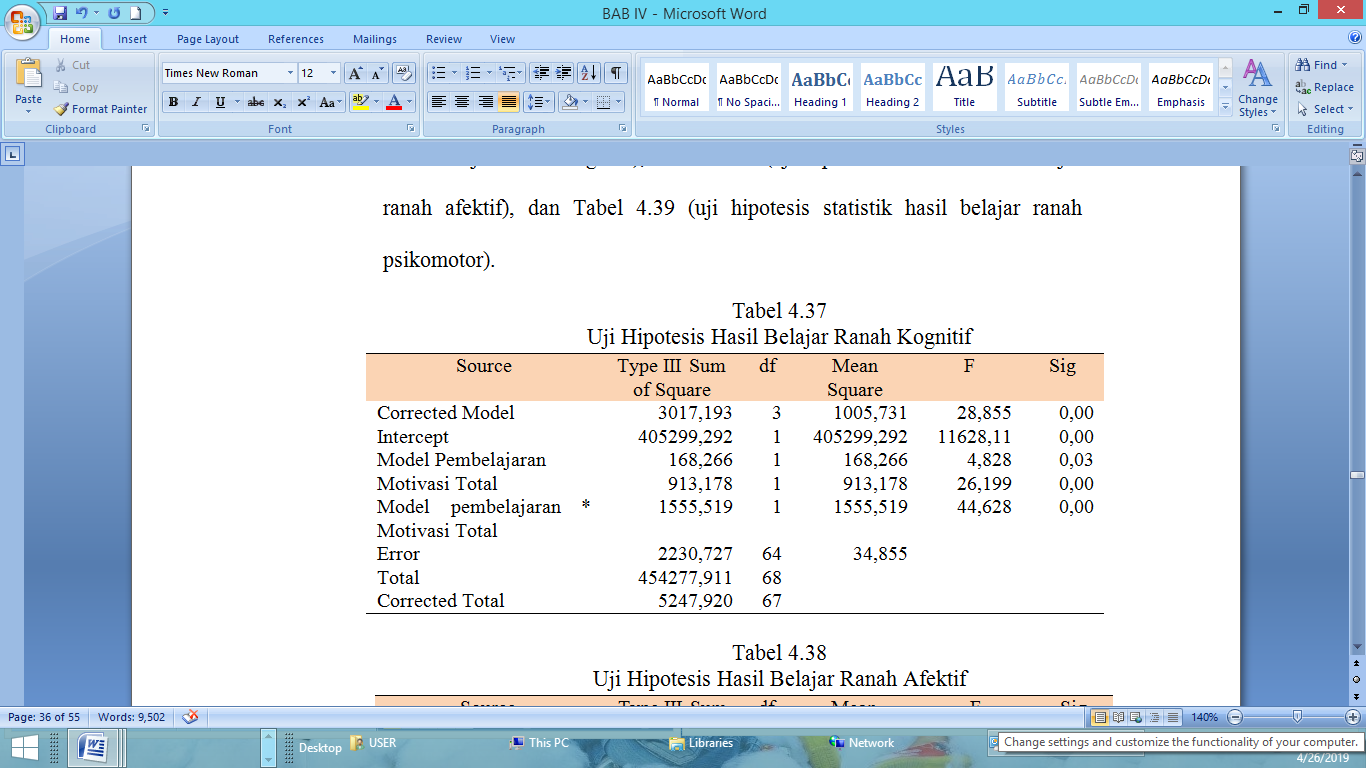
Homogeneity Test of Experimental Class and Control Class

Based on the homogeneity test in Table 4.24, it shows us the number of Fcount is 0.25 and its significance is 0.61> 0.05 so that the variance sample is homogeneous.

**Hypothesis Test**

The hypothesis test is the last step to determine whether the temporary result of the problem statement on the hypothesis research is true or false. In other words, the statistical hypothesis test is also meaningful if the null hypothesis is accepted or rejected. The statistical hypothesis test of this research is ancova 2 lines.

Table 6. The Result of Hypothesis Test of Cognitive Learning Outcomes Scores



To answer the hypothesis research in CHAPTER II, therefore the researcher conducts the following test;

1. **The First Hypothesis Test**

Ha : The student learning outcomes that use the problem-based learning model is significantly higher than the student learning outcomes that use the direct learning model on the food cutting subject at SMKP YPM 2 Taman.

Ho : The student learning outcomes that use the problem-based learning model is as same as the student learning outcomes that use the direct learning model on the food cutting subject at SMKP YPM 2 Taman.

In this research, the student learning outcomes divide into three aspects: (1) the cognitive learning outcomes aspect.

1. **The Hypothesis Result of Cognitive Learning Outcomes**

In Table 6, it shows us that Fcount of cognitive learning outcomes toward the learning model effect is 4.828 and its significance is 0.03. Because the significance is <0.05, then Ho is rejected and Ha is accepted. Therefore, in this research, it has a significant influence on the use of problem-based learning model and the direct learning model toward the cognitive learning outcomes on the subject of food cutting. Furthermore, to answer the hypothesis research above, we can see the mean test of cognitive learning outcomes as in Table 9 as follows.

Table 9. The Mean Test Result of Cognitive Learning Outcomes toward the Effect of Learning Model

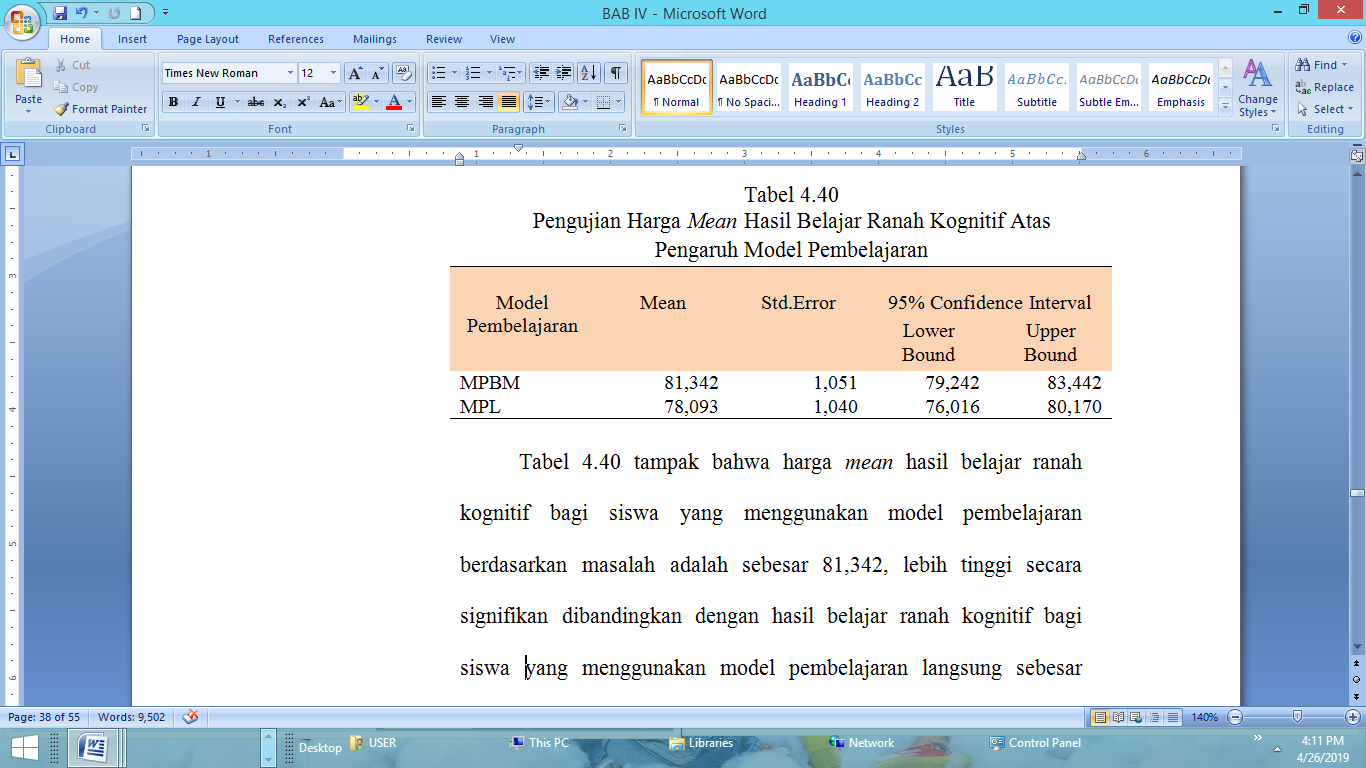


Table 9 shows us that the number of mean of student cognitive learning outcomes using the problem-based learning model is 81,342 which are significantly higher than the student cognitive learning outcomes of the direct learning model that is 78,093. Fcount of cognitive learning outcomes toward the learning model effect is 4.828 and its significance is 0.03 <0.05, then Ho is rejected and Ha is accepted. In conclusion, the student cognitive learning outcomes using the problem-based learning model is significantly higher than the student learning outcomes using the direct learning model on the subject of food cutting at SMKP YPM 2 Taman.

1. **The First Hypothesis Test**

Ha: The student learning outcomes that have high learning motivation are significantly higher than the student learning outcomes that have low learning motivation on the subject of food cutting.

Ho: The student learning outcomes that have high learning motivation are as the same as the student learning outcomes that have low learning motivation on the subject of food cutting.

In this research, the student learning outcomes divide into three subjects: (1) the cognitive learning outcomes subject.

1. **The Hypothesis of Cognitive Learning Outcomes toward the Effects of Learning Motivation**

In Table 6, it shows that Fcount of cognitive learning outcomes toward the effect of learning motivation is 26.299 among its significance is 0.00. Because the significance is <0.05 however Ho is rejected and Ha is accepted. So, it has a significant influence between the students among the low learning motivation toward the cognitive learning outcomes on the subject of food cutting. Moreover, to answer the hypothesis research above, we can see the mean test of cognitive learning outcomes as in Table 12 as follows.

Table 12. The Number of Mean Test of Cognitive Learning Outcomes toward the Effect of Learning Motivation

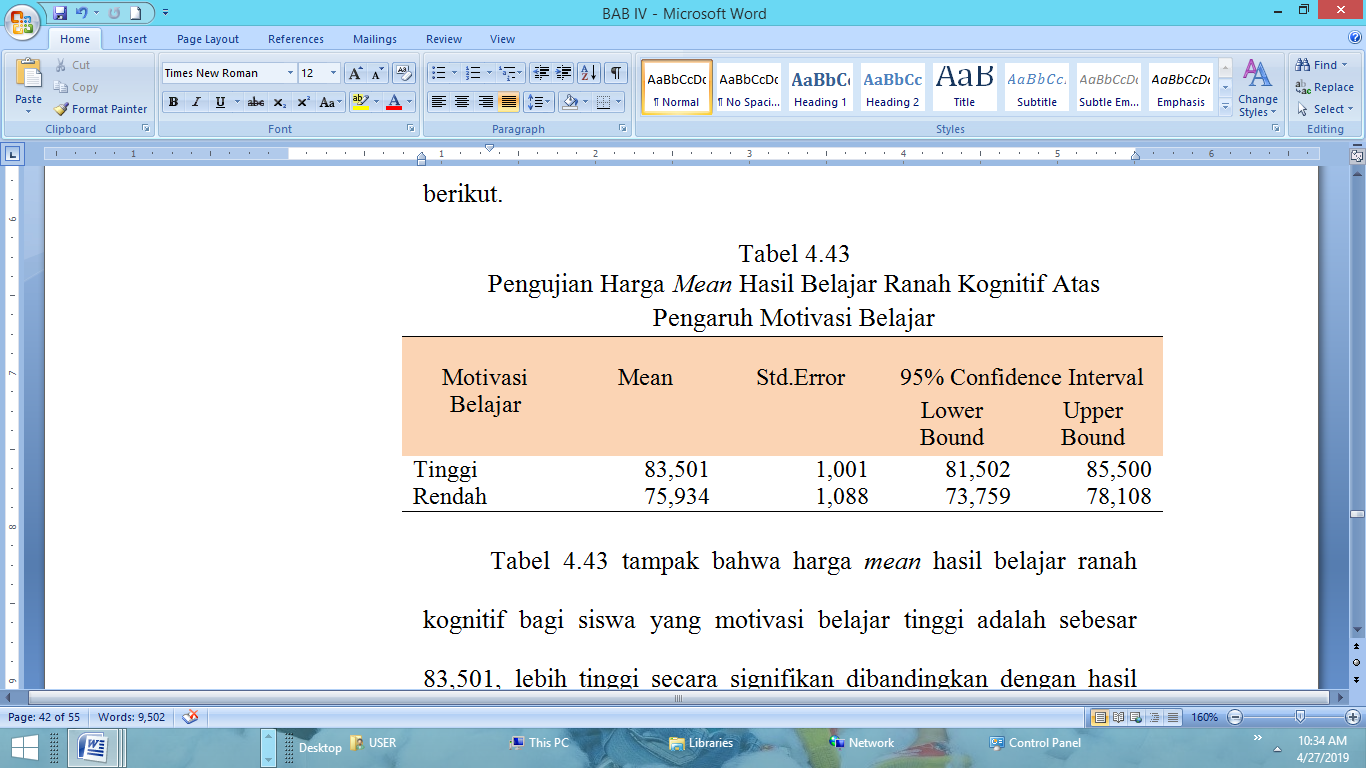
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Table 12 shows that the number of mean of the student cognitive learning outcomes that have high learning motivation is 83,501 which are significantly higher than the student cognitive learning outcomes that have low learning motivation that is 75,934. Fcount of cognitive learning outcomes toward the effect of the learning model is 26.299 and its significance is 0.00 <0.05 so that Ho is rejected and Ha is accepted. In conclusion, the student cognitive learning outcomes that have high learning motivation are significantly higher than the student learning outcomes that have low learning motivation on the subjects of food cutting at SMK YPM 2 Taman.

**CONCLUSION**

Inferences

Based on the test result and the discussion result of this research, the researcher represents the conclusion as follow.

The conclusions of the research are as follow;

1. The student cognitive, affective and psychomotor learning outcomes using the problem-based learning model are significantly higher than the student learning outcomes using the direct learning model on the subject of food cutting at SMKP YPM 2 Taman.
2. The student cognitive, affective and psychomotor learning outcomes that have a high level of learning motivation are significantly higher than the student learning outcomes that have low learning motivation level on the subject of food cutting at SMKP YPM 2 Taman.
3. It has an interaction between the learning model and the level of learning motivation towards the cognitive, affective and psychomotor learning outcomes on the subject of food cutting at SMKP YPM 2 Taman.

Suggestions

Based on the conclusions and implications above, the researcher suggests;

1. The student learning outcomes should use the problem-based learning model because the student learning outcomes that use this model is significantly higher than the student learning outcomes that use the direct learning model on the subject of food cutting at SMKP YPM 2 Taman.
2. The students should have a high learning motivation level because the student learning outcomes that have a high level of learning motivation is significantly higher than the student learning outcomes that have low learning motivation level on the subject of food cutting at SMKP YPM 2 Taman.
3. If the next researcher wants to continue to analyze the other learning model among the learning motivation, the research that researcher analyze should have an interaction between the learning model and the level of learning motivation towards the learning outcomes on the subject.

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