DEVELOPING STUDENTS' CRITICAL THINKING IN ENGLISH SPEAKING SKILL BY USING PROBLEM BASED LEARNING METHOD

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ABSTRACT

The objectives of this study are: (1) to improve students' critical thinking by using Problem-Based learning method in speaking skill in Eleventh Grade in SMK Negeri 4 Gorontalo. (2) to find out the students' responses after the implementation of Problem-Based learning method. They type of this study is experimental teaching by Cresswell (2014). The subjects of the research were Eleventh Grade students. This study involved 20 students of accountant class. The instruments of the study were observation, questionnaires, documentations, tests and rubric. the result of the study showed that there was a significant difference between the score of pre-test and post-test. The score of t_{table} in significant level of 0.05 where $12.77 > 1.73$ that indicates (H_a) was accepted and (H_0) was rejected. Furthermore, this research showed the correlation between students' critical thinking and their speaking skill. It can be seen that the r_{value} (0.775) was at the level of "high" correlation. It can be concluded that the correlation between the students' critical thinking and speaking skills of the sample class was in high correlation. The scores form t-test and t-table were compared. The t-table at the df = 18 in the level of significance (α=0.05) was 1.73. Therefore, it can be seen that $t_{value} > t_{table}$ ($5.203 > 1,73$). The score of t_{table} in significant level of 0.05 where $5.203 > 1.73$. As a result, the Ha is accepted and Ho is rejected. In this case that variable X (students' critical thinking) have high relationship or gave influence on students' speaking skill.

Keywords: *Critical Thinking, Speaking Skill, Problem Based Learning*

INTRODUCTION

Critical thinking is a very hotly debated topic these days. All the teachers are now aware of the importance of equipping learners with critical thinking techniques, and teachers are making efforts to teach these techniques in the most appropriate way. Students' critical thinking will also affect their communicating skills. One of the skills itself is speaking skill. The nature of speaking is so much part of daily life that we take it for granted. However, learning speaking, whether in a first or other language, involves developing subtle and detailed knowledge about why, how, and when to communicate and complex skill for producing and managing interaction, such as asking a question or obtaining a turn. Speaking skills are often considered the most important skill for the students.

Speaking is a process of interaction between speaker and listener in which they share and receive the information. In classroom situation, the speaker here is the students and the listeners are the other students and the teacher. Unfortunately, the speaking process in the class is not going well for both

students and teachers. Because the students tend to be passive and only receive from what the teacher said. The students are not giving any feedbacks to the knowledge that the teacher shares.

Meanwhile, critical thinking is a path of doing analysis and discussion to analyze discussion, to make inferences from the scientific statement, to make extensive and comprehensive reasoning and justifying judgments; those skills are including critical thinking which being able to be evaluated (Samli, 2011). As an illustration, how many individuals or students could ask the standard four W (What, where, when, who) and one H (How) when they are facing or analyzing some problems.

Problem-Based Learning (PBL), as one of "student-centered" learning method, allows the teacher to conduct meaningful task by using authentic language. Ansarian & Lin (2018) stated that it facilitates the students to learn the learning materials through interaction and experience in expressing ideas based on real life problems. Moreover, this method does not only develop students' cognitive skills to remember and understand, but also improve their higher-order thinking skills by analyzing, evaluating and creating solutions.

Based on this research, this research will be conducted on one of the Vocational High School in Gorontalo, SMK Negeri 4 Gorontalo. The English teaching learning process has different purpose in every teaching learning program. This research focused on the implementation of problem-based learning to develop students' critical thinking for speaking skills. To see the problems that occurs on students' critical thinking, this research conducted an observation for getting information of how's the teaching and learning process in the class. The observation has been conducted on SMK Negeri 4 Gorontalo on November 2nd, 2020. In order to look up the students by observing them through their English teacher of SMK Negeri 4 Gorontalo.

This study aims to analyze students' critical thinking and the relationship between students' speaking skills, and to apply Problem-Based Learning method in order to improve students' critical thinking in English speaking skills. There are two reasons for choosing this topic. First, critical thinking is a highly need skills both for students and teachers. Second, the students' English-speaking skills. The students use language not only for communication but also for intellectual function. It means that students use language as an accelerator to think about situation or problem they have encountered.

THEORETICAL BASES
The Definition of Speaking Skills

Speaking is one of four language skills that should be mastered for those who learn English Language. It is known as the productive skill to express ideas, message, and feelings. It means this speaking skill is a direct process to explore the idea. Speaking may be referred to as speech, or oral language or spoken language or verbal language. Speaking

involves both linguistic knowledge and skills for actual use in the production of linguistic utterances. Kormos and Dennies (2010) argue that to be attained in mastering a language, the ultimate goal is speaking a language fluently. Although categorization techniques and the terms used to describe the elements are different, the underlying constructs of speaking overlap. This variation makes it almost impossible to design a speaking test that can elicit the learner's speaking skills in all the areas of knowledge in real practice. Therefore, the operationalized definition of the speaking construct must be identified.

According to Aliakbari and Jamalvandi (2011), speaking is an interactive process of constructing meaning that involves producing, receiving, and processing information. It is frequently unconstrained, open-ended, and evolving, but it is not unpredictable. Moreover, people who want to be able to communicate through speaking, they should learn it seriously. Because of speaking in foreign language is very difficult, people should not only know a certain amount of knowledge of grammar and vocabulary in English, but also practice communicating through socialization in their social environment continuously. As stated by Namaziandost, AbdySaray, and Rahimi Esfahani (2018), for most people, the ability to speak a language is synonymous with knowing that language since speech is the most basic means of human communications.

The Definition of Critical Thinking Skills

Critical thinking has been recently introduced and gained a high position in foreign language teaching (FLT) settings so that nowadays enhancing critical thinking in learners is considered one of the foreign language teachers' tasks. Many different factors can affect learners' critical thinking skills. The ability to think requires the ability to remember and understand, therefore the ability to remember is the most crucial party in developing thinking skills (Sumantri, 2015). Thinking skills are one of the life skills that need to be developed through an educational process because they can determine the success of everyone's life.

Moreover, students typically do not know how to think critically. Students are not born with the ability to think critically, and their prior learning experiences often do not require them to think critically. Therefore, teachers who wish to integrate this skill in their classroom experiences must first model the behavior (Hemming, 2000). Students must learn how to think critically before they can apply the skill to content scenarios.

The Origin of Problem Based Learning

Problem-based learning was first developed in medical education in the 1950s. The development of Problem-based learning is generally credited to the work of medical educators at McMasters University in Canada in the 1970s. Around the same time, other medical schools in various countries, such as Michigan State University in the United States, Maastricht University in the Netherlands, and

Newcastle University in Australia were also developing problem-based learning (Barrows, 1996). Problem-based learning was conceived and implemented in response to students' unsatisfactory clinical performance (Barrows, 1996; Barrows and Tamblyn, 1980) that resulted from an emphasis on memorization of fragmented biomedical knowledge in the traditional health science education.

The adoption of Problem-Based Learning in higher education of the medical field occurred throughout the 1990s. Problem-based learning has been applied globally in a variety professional school (Boud and Feletti, et al. 1991). Problem-Based Learning consists of presenting students authentic and meaningful problems that can make it easier for them to conduct investigations and inquiry. This is in line with Gorghou et al. (2015) said that problem-based learning is often known as inquiry-based learning which is an effective way for students to work who can build basic ability in various domains or curricular fields. According to Saragih and Habeahan (2014), Problem-Based learning was one of the innovative learning models that could provide conditions for active and creative students.

Problem-Based Learning Method

Problem Based Learning is defined as pedagogical approach which uses cases and problems as departure points in order to accomplish the intended learning objectives (as cited in Pijl-Zieber, 2006; Tortop and Ozck, 2013). The main principle of Problem-Based Learning is based on maximizing learning with

investigation, explanation, and resolution by starting from real and meaningful problems. Therefore, Problem-Based Learning is the art of problem solving. As stated by Hmelo-Silver (2004), Students' problem solving, self-directed, collaborative learning skills and motivation level are aimed to be developed during the problem-solving process.

Problem-Based Learning operates into three major stages namely, initial stage, Problem-Based Learning (PBL) stage, and final stage (Masek and Yamin, 2010). In the first stage, they will be presented by some topics the appropriate for the students and they will try to discuss about the problem. They will begin to analyze and understand the topic without Problem-Based Learning method.

METHODS

Research Design

The method of this research uses mixed-method design. The study used the correlation design. Correlation research assesses the relationships among two or more variables in a single group. The researcher tried to measure the correlation between students' critical thinking and speaking skill of the eleventh grade at SMKN 4 Gorontalo. In this research the researcher conducted an experimental method. According to Cresswell (2014), there are four main types of experimental research designs including true experimental, quasi experimental, pre-experimental, and single subject design. In this research, the researcher selected pre-experimental design, with one group pre-test and post-test design.

Variable of Research

Based on Siregar (2010) variable is construct that its properties have been given numbers (quantitative) or can also be interpreted variable is a concept that has a variety of values, in the form quantitative or qualitative value can fluctuate. Therefore, the researcher specified the variable of this research were consisted of 2 variables. The first variable was students' critical thinking (x) and the second variable was students' speaking skill (y).

Sample of Research

The sample of this research was taken from SMK Negeri 4 Gorontalo. They were eleventh grade students of accountant class. The participants learned English only in general, and not focusing on their major field. The total participants were 20 students.

Technique of Collecting the Data

A. Test

The indicator of the students' Critical Thinking of this research will be based on students' performance. This research used test of critical thinking which built up from four indicators. Thus, from the four indicators it is found 20 items of test. The test was conducted twice, before and after applying problem-based learning. Information about the tests is explained in detail as follows:

1. Pre-test

Pre-test is used in the first meeting to measure the ability of students before given the treatment. The researcher asked the students to explain the topics that the researcher gives. The students' performance is recorded by the researcher in order to analyze the students' critical thinking and fluency of speaking

2. Post-test

Post-test is used to find out the improvement of students in critical thinking in speaking skill after given the treatment. The researcher also asked the students to explain the topic the researcher gives. The researcher did the same steps as in the pre-test. The recording of students' presentation was analyzed to find whether or not there was the improvement after given the treatment.

The second rubric system for the speaking test was adopted from Theresa (2001). The rubric was used for measuring students' achievement in speaking. In order to find out the students' ability in speaking English, each student would get the maximum of 16 points if the speak clearly. In contrast, the students would get the minimum score of 4 point if they could not utilize their English well.

B. Experimental Teaching

During the study, the researcher conducted an experimental teaching in the eleventh-grade students of SMK Negeri 4 Gorontalo. The researcher used problem-based learning (PBL) as a model in teaching critical thinking.

C. Observation

Observation is one way of collect the data. Creswell (2009, p.261) argues that observation is kind of collecting the data in which the researchers take field notes on the behavior and activities individuals at the research site. This technique will be used to observe the students' speaking skill and the teachers' skills during the applying of Problem-Based Learning method.

D. Questionnaire

The researcher used questionnaire as the tools to observe the target of this research. This questionnaire is useful to get deep information about their opinion after conducting several observations. After conducting the post-test, the students were given a questionnaire that consists of 10 questions in order to get their responses of the implementation of Problem Based Learning Method in their class.

E. Documentations

Documentations involved taking photographs, audiotape and videotape recording to monitor and to evaluate the actions. Meanwhile, the quantitative data will be gained pre-test, progress test and post-test to measure the improvement of students' critical thinking in speaking skills.

Technique of Analyzing the Data

A. Analysis of Test Result

In order to analyze the result of the test, the researcher used statistics formula to find out the range of the data, the interval class, frequency distribution, and the mean of the score.

B. Analysis of Hypotheses

In examining hypothesis, the researcher used t- test as used to determine any significant difference in the students' scores (Sudjiono, 2011). The alternative hypothesis (H_a) and null hypothesis (H_0) were determined as follows:

1. If *t*-test is higher than *t*-table, it means H_a is accepted and H_0 is rejected

2. If *t*-test is lower than *t*-table, it means H_0 is accepted and H_a is rejected

In order to analyze the first hypotheses, the researcher used statistical formula by (Sudijono, 2011). The function was to find out the standard deviation, the mean of the score, the standard error of mean difference, t- score and the degree of freedom.

Moreover, in order to analyze the second hypotheses, the researcher used the formula of Product Moment by Pearson as follow:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{N\sum x^2 - (\sum X)^2\}\{N\sum Y^2 - (\sum Y)^2}}}$$

To know the contribution of the variable X to variable Y the formula below was used:

$$KP = r^2 \times 100\%$$

To know the value of t_{hitung} the formula below was used:

$$t_{value=\frac{r\sqrt{n-2}}{\sqrt{1-r^2}}}$$

In this research, the researcher used SPSS 16.0, because SPSS is the most common statistical data analysis software package used in educational research and it is available at most institutions of higher education.

Research Procedure

The procedure of this research will be based on Sinaga's (2007) theory about Problem-Based Learning method. It explains that there are 5 steps in applying Problem-Based Learning method, they are Orientation, Organizing, Guiding, Analyzing, and Developing.

FINDINGS AND DISCUSSION

Research Findings

A. Result of the Tests

The test was given to the students in order to measure the students' capability and improvement in critical thinking before and after the treatment. The data obtained from both pre-test and post-test were statistically calculated in order to identify the mean of the scores and to analyze whether there was a significant difference between pre-test and post-test. After transforming the raw data of both Pre-Test and Post-Test, the results of both pre-test and post-test as described in the Table 1.

Table 1. The Result of Pre-test and Post-test

No.	Students' Initial	Pre-test Score	Post-test Score
1	AG	49	77
2	AB	32	75
3	AH	60	81
4	AA	37	75
5	HR	66	87
6	IN	75	87
7	HJ	45	50
8	LS	51	75
9	QB	35	66
10	RH	49	75
11	RM	62	87
12	RA	56	75
13	RT	34	75
14	RR	51	81
15	ST	36	61
16	SR	42	75
17	SD	47	77
18	US	50	87
19	YS	54	79
20	ZK	72	92

Based on the result on Table 1, the highest score for the pre-test was 75 and the lowest was 32. Meanwhile, the highest score for the post-test was 92 and the lowest score was 50.

1. Result of Pre-Test

     The mean score from the pre-test was

50, as shown below:

$$X = \frac{999}{20}$$

$X = 49,95$ (taken = 50)

Table 2. The Frequency Distribution of Students' Pre-test Score

No.	Students' Score	Fi	Xi	Fi.Xi
1.	31 – 35	3	34	102
2.	36 – 40	2	36	72
3.	41 – 45	2	43	86
4.	46 – 50	4	49	196
5.	51 – 55	3	51	153
6.	56 – 60	2	58	116
7.	61 – 65	1	62	62
8.	66 – 70	1	66	66
9.	71 – 75	2	73	146
	Total:	N = 20	472	999

2. Result of Post-Test

     The mean score from the post-test

was 77, as shown below:

$$X = \frac{1534}{20}$$

$X = 76,7$ (taken = 77)

Table 3. The Frequency Distribution of Students' Post-test Score

No.	Students' Score	Fi	Xi	Fi.Xi
1.	49 – 54	1	50	50
2.	55 – 60	0	0	0
3.	61 – 66	2	63	126
4.	67 – 72	0	0	0
5.	73 – 78	9	75	675
6.	79 – 84	3	81	243
7.	85 – 90	4	87	348
8.	91 – 96	1	92	92
	Total:	N = 20	448	1534

B. Examining Hypotheses

     Sudjono (1994) stated that t-test is used to determine any significant difference in students' scores. In examining hypothesis, the alternative hypothesis (H_a) and null hypothesis (H_0) were determined as follows:

1. If *t*-test is higher than *t*-table, it means H_a is accepted and H_0 is rejected

2. If *t*-test is lower than *t*-table, it means H_0 is accepted and H_a is rejected

The pre-test and post-test scores are described in Table 3.

Table 3. Students' Pre-test and Post-test Score

No.	Students' Initial	Pre-Test	Post-Test	(x-y) (D)	(x-y)² (D)²
1	AG	49	77	28	784
2	AB	32	75	43	1849
3	AH	60	81	21	441
4	AA	37	75	38	1444
5	HR	66	87	21	441
6	IN	75	87	12	144

7	HJ	45	50	5	25
8	LS	51	75	24	576
9	QB	35	66	31	961
10	RH	49	75	26	676
11	RM	62	87	25	625
12	RA	56	75	19	361
13	RT	34	75	41	1681
14	RR	51	81	30	900
15	ST	36	61	25	625
16	SR	42	75	33	1089
17	SD	47	77	30	900
18	US	50	87	37	1369
19	YS	54	79	25	625
20	ZK	72	92	20	400
	N = 20	-	-	$\sum D = 534$	$\sum D2 = 15916$

Then the mean of difference (M_d) was calculated and found as 26,7 while standard error of the mean difference (SEM_D) between two variables, X and Y was 2,09. After that, to find the score of *t*-test can be calculated in the following formula:

$$t_o = \frac{MD}{SEMD} = \frac{26,7}{2,09} = 12,77$$

The next is degree of freedom was 18. Using the following formula:

$$Df = 20\text{-}1 = 19$$

To examine the hypotheses, the scores form t-test and t-table were compared. The t-table at the df = 19 in the level of significance ($\alpha=0.05$) was 1.73. Therefore, it can be seen that $t_o > t_t$ (12,77 > 1,73). The score of t_{table} in significant level of 0.05 where 12,77 > 1,73. (H_a) was accepted and (H0) was rejected. It can also be inferred that there was a significant difference between pre-test and post-test scores after the treatment.

C. The Correlation Between Students' Critical Thinking and Speaking Skill

In this case, both students' critical thinking and speaking skill are related by using Pearson Product moment formula. The data are described on Table 4.

Table 4. The Correlation of Critical Thinking and Speaking Skill

No.	Critical Thinking (X)	Speaking (Y)	XY	X^2	Y^2
1.	68	56	3808	4624	3136
2.	55	56	3080	3025	3136
3.	85	75	6375	7225	5625
4.	69	50	3450	4761	2500
5.	90	81	7290	8100	6561
6.	85	88	7480	7225	7744
7.	63	56	3528	3969	3136
8.	63	50	3150	3969	2500
9.	50	44	2200	2500	1936
10.	69	56	3864	4761	3136
11.	76	69	5244	5776	4761
12.	76	66	5016	5776	4356
13.	66	69	4554	4356	4761
14.	73	75	5475	5329	5625

15.	56	63	3528	3136	3969
16.	73	75	5475	5329	5625
17.	70	50	3500	4900	2500
18.	76	63	4788	5776	3969
19.	76	56	4256	5776	3136
20.	90	88	7920	8100	7744
	$\sum X = 1429$	$\sum Y = 1286$	$\sum XY = 93981$	$\sum X^2 = 104413$	$\sum Y^2 = 85856$

From the calculation of variable X and Y, it was found that:

$$\sum X = 1429 \quad \sum X^2 = 104413$$
$$\sum Y = 1286 \quad \sum Y^2 = 85856$$
$$\sum XY = 93981$$

Based on the data above, it can be calculated based on the product moment will be found the product of r_{xy} as follow:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{N\sum x^2 - (\sum X)^2\}\{N\sum Y^2 - (\sum Y)^2}}}$$

$$r_{xy} = \frac{20 \; x \; 93981 - 1429 \; x \; 1286}{\sqrt{(2088260 - 2042041)(1717120 - 1653796)}}$$

$$r_{xy} = \frac{1879620 - 1837694}{\sqrt{(46219)(63324)}}$$

$$r_{xy} = \frac{41926}{\sqrt{(46219)(63324)}}$$

$$r_{xy} = \frac{41926}{54099{,}65}$$

$$r_{xy} = 0{,}775$$

Based on the manual calculation above, it was found that the r_{value} was 0,775. The the r_{value} was consulted with the table of interpretation coefficient correlation r as in Table 5.

Table 5. Coefficient Correlation Interpretation

Interval	Category
0.00 – 0.199	Very Poor
0.20 – 0.399	Poor
0.40 – 0.599	Fair
0.60 – 0.799	High
0.80 – 1.00	Very High

(Teguh, 2013)

From the Table 5 it can be seen that the r_{value} (0.775) was at the level of "high" correlation. It can be concluded that the correlation between the students' critical thinking and speaking skills of the sample class was in high correlation. The result of the calculation was counted by product moment above showed that the index of correlation was 0.775. then, the degree of freedom with formula, as follow:

$$Df = 20\text{-}2 = 18$$

And then to know the contribution of the variable X to the variable Y is used the formula as follows:

$$KP = r^2 \; x \; 100\%$$
$$KP = 0.775^2 x \; 100\%$$
$$KP = 0.600625 \; x \; 100\%$$
$$KP = 60{,}0625 \; \%$$

Based on the data above, it can be concluded that the variable X (Students' critical thinking) gives the contribution to the students' speaking skill was 60,0625%. To know the value of t_{value} by using the formula:

$$t_{value} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$t_{value=}\frac{0.775\sqrt{20-2}}{\sqrt{1-0.775^2}}$$

$$t_{value=}\frac{3.288}{0.631}$$

$$t_{value=}5.203$$

To examine the hypotheses, the scores form t-test and t-table were compared. The t-table at the df = 18 in the level of significance (α=0.05) was 1.73. Therefore, it can be seen that t_{value} > t_{table} (5.203 > 1,73). The score of t_{table} in significant level of 0.05 where 5.203 > 1.73. As a result, the Ha is accepted and Ho is rejected. In this case that variable X (students' critical thinking) have high relationship or gave influence on students' speaking skill.

Discussion

In pre-test before the implementation of the Problem-Based Learning method, the students' score was low that can be seen from the description data that most students' score was under 70 (*Good Category).* As a result, the mean score of the pre-test was only 50 *(Bad Category)*. It showed that the lack of critical thinking on the students.

In post-test after the implementation of the Problem-Based Learning (PBL) method, the students' score was high. The students' score of critical thinking was improved significantly that can be seen from the description data. The implementation of PBL method was boosting students' critical thinking. As a result, the mean score of the post-test was 77 *(Good Category)*. It can also be inferred that there was a significant difference between pre-test and post-test scores after the treatment.

From the description of the data, the first research question about whether the PBL could improve the students' critical thinking skills. Findings of this study showed that the t-test indicated that there was a significant difference between the score of pre-test and post-test. The score of t_{table} in significant level of 0.05 where 12,77 > 1,73. (Ha) was accepted and (H0) was rejected. In conclusion, the Problem-Based Learning (PBL) method can improve the students' critical thinking skill at SMK N 4 Gorontalo. The second research question was about the students' responses about Problem Based Learning in improving their critical thinking skills. In order to get their responses about the implementation of PBL method, they were given a set of questionnaires that consists of 10 questions.

The finding showed that the students agreed that Problem Based Learning can improve their critical thinking skills. It was clearly showed from the statistical data of the students' performance on their critical thinking. The data analysis showed that there was a significant difference before and after implementing the PBL method. The students' critical thinking was improved after implementing the PBL method.

Furthermore, this research showed the correlation between students' critical thinking and their speaking skill. It can be seen that the r_{value} (0.775) was at the level of "high" correlation. It can be concluded that the correlation between the students' critical thinking and speaking skills of the sample class

was in high correlation. The scores form t-test and t-table were compared. The t-table at the df = 18 in the level of significance (α=0.05) was 1.73. Therefore, it can be seen that $t_{value} > t_{table}$ (5.203 > 1,73). The score of t_{table} in significant level of 0.05 where 5.203 > 1.73. As a result, the Ha is accepted and Ho is rejected. In this case that variable X (students' critical thinking) have high relationship or gave influence on students' speaking skill.

CONCLUSION

Based on the description of the data that mentioned in the previous chapter, the data showed that the t-test indicated that there was a significant difference between the score of pre-test and post-test. The score of t_{table} in significant level of 0.05 where 12,77 > 1,73. (H_a) was accepted and (H0) was rejected. It can also be inferred that there was a significant difference between pre-test and post-test scores after the treatment. It showed that there was a significant difference between pre-test and post-test scores after the treatment. In conclusion, the problem-based learning method can improve the students' critical thinking skill at SMK N 4 Gorontalo.

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score of t_{table} in significant level of 0.05 where 5.203 > 1.73. As a result, the Ha is accepted and Ho is rejected. In this case that variable X (students' critical thinking) have high relationship or gave influence on students' speaking skill.

SUGGESTION

At the end of this paper, the researcher would like to offer some suggestions, for the teacher and the learner, and recommendation for further research:

1. The English teachers are expected to motivate their students to increase their critical thinking and give motive to increase their knowledge about critical thinking and problem-based learning.

2. For students, they are expected that to realize that by learning critical thinking can help them easier in understanding and solving problems whether in teaching and learning process or in daily life.

3. For the next researcher, deeper analysis about students' critical thinking. Looking for things that can giving good affect in students, critical thinking skills and find the influence or the correlation on different skills.

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