

**THE EFFECT OF TEACHING CRITICAL THINKING SKILL
THROUGH PROBLEM SOLVING TECHNIQUE
TOWARD STUDENTS' WRITING SKILL
IN STKIP ADZKIA PADANG**

Rona Rossa

PGSD PROGRAM, STKIP ADZKIA

Surel : rona.rossa@yahoo.com

Abstract: The Effect Of Teaching Critical Thinking Skill Through Problem Solving Technique Toward Students' Writing Skill In Stkip Adzkia Padang. This research was aimed to find out the effect of teaching Critical Thinking Skill through Problem Solving technique toward students' writing skill of Analytical Exposition text in STKIP Adzkia Padang. This research was a quasi-experimental research. It was conducted at STKIP Adzkia Padang. The population of this research was the students at fifth semester of PGSD which consisted of three classes in academic year 2014/2015 who was totally ninety two students. The instrument that was used for this research was writing. The result of this research revealed that: the students who were taught by Critical thinking Skill through Problem Solving Technique were better than students who were taught by brainstorming technique toward students' writing skill. Based on findings, it was be concluded that Critical Thinking skill through Problem Solving technique gave significant effect on students' writing skill.

Key Words : Critical Thinking Skill through Problem Solving Technique, Writing Skill.

Abstrak: Pengaruh Pengajaran Critical Thinking Skill Melalui Teknik Problem Solving Terhadap Keterampilan Menulis Siswa Di Stkip Adzkia Padang. Penelitian ini bertujuan untuk mengetahui pengaruh pengajaran Critical Thinking Skill melalui teknik Problem Solving terhadap keterampilan menulis siswa pada teks Exposition Analytical di STKIP Adzkia Padang. Penelitian ini merupakan penelitian kuasi-eksperimental. Itu dilakukan di STKIP Adzkia Padang. Populasi dalam penelitian ini adalah siswa semester lima PGSD yang terdiri dari tiga kelas pada tahun akademik 2014/2015 yang berjumlah 92 siswa. Instrumen yang digunakan untuk penelitian ini adalah menulis.. Hasil penelitian ini mengungkapkan bahwa: siswa yang diajar dengan keterampilan berpikir kritis melalui teknik pemecahan masalah lebih baik daripada siswa yang diajar dengan teknik brainstorming terhadap keterampilan menulis siswa. Berdasarkan temuan, dapat disimpulkan bahwa keterampilan Berpikir Kritis melalui teknik Problem Solving memberikan pengaruh yang signifikan terhadap keterampilan menulis siswa.

Kata Kunci : Kemampuan Berpikir Kritis melalui Teknik Problem Solving, Keterampilan Menulis

INTRODUCTION

Although English is treated as a foreign language in Indonesia, the Indonesian government does not ignore its important role in many aspects of international life. In the last three decades English has been widely used for many purposes, such as for communication, education, technology

and knowledge. It means that the competency of English is important for Indonesia's citizens to win the competition in the global life.

Many English teachers seem to raise concerns on challenges they face in teaching writing skills. This might be due to the fact that many of their students have low writing ability. This case does

p-ISSN: 2355 - 1739 e-ISSN: 2407 - 6295
--

not only happen in Indonesia but also in the United States where English is the mother tongue. As Graham and Perin (2007) confirmed: "Yet every year in the United States large number of adolescents graduate from high school are unable to write at the basic levels required by colleges or employers."

Graham and Perin mention that even though English is their first language, the students in the United State still find it difficult to make a good writing, and even in Indonesia, it is difficult to the students to make a good writing.

To be more specific, the same problem was also found at STKIP Adzkie Padang. Based on preliminary research conducted to the students of fifth semester at STKIP Padang, the researcher found some problems. The first problem was related to the students' writing skill. When the teacher asked the students to make a paragraph, they did not understand how to start their writing, because they had no ideas. It occurred because the topics were not familiar with them and they did not have sufficient vocabularies. Moreover, they very confused when the lecturers asked them to make analytical expositions. The analytical expositions text consists of thesis statement, series of arguments, and reiteration. It was difficult for them to create their own arguments. It was occurred because the students rarely created their own arguments in teaching and learning process and in their daily activities. In addition, they also did not have sufficient grammatical knowledge of the sentences in their writing so there were many mistakes that they had made in their writings.

The second problem was the students' habit. They rarely used English in their daily activities. They just used English in

their English class and in doing their task in order to get good mark. They did not really care of their skills in English because in their mind they just thought about how to pass the examination, quiz and other academic assessment, so they could get a good mark. Therefore, it was found that their English competence was low. These problems could also occurred because un-integrated learning system. The students were accustomed to simply doing the task which was already available on their text book or the worksheet made by their lecturer. They were not used to speak and write their own English sentence, so it became difficult for them to create their own sentences in English.

It can be concluded that the students at STKIP Adzkie did not sufficiently-learn skill on how to make a good paragraph, how to get many ideas when they start their writing and how to arrange their ideas systematically. Dealing with this phenomenon, it is believed that kinds of techniques used would significantly affect the students' learning achievement. However, a common technique such as Brainstorming is only effective for some students, such as for the students with high motivation. However, Brainstorming is still the most favorite techniques to teach writing. Teachers usually brainstorm students in the first phase of teaching writing. Therefore, the writer would like to try to implement Critical Thinking Skill through Problem Solving technique as the new technique in teaching writing.

Critical Thinking Skill Through Problem Solving Technique

Santrock (2012: 316) says "problem solving involves finding an appropriate way to attain a goal." Then,

p-ISSN: 2355 - 1739
e-ISSN: 2407 - 6295

Elliot et.al.(1996:296), said that this technique concerns with how the educators can improve the abilities of their students to solve the problem at school. This idea is in line with Halvorsen (2005: 4), which says that analyzing a somewhat complex problem can offer students a myriad of opportunities to analyze an issue critically. He also argues that by asking students to look at pro's and con's and costs and benefits, a teacher is forcing them to consider the real world problems that influenced their daily lives in a critical way.

It is supported by Shangarffam and Mamipour (2011:122) who argue that problem solving technique is the technique offering students opportunities to analyze an issue critically through the problem given to be discussed. In this technique, the students are asked to identify the problem relevant to their lives and interests. Next, they work together to define the problem clearly, then, list the root causes of the problem in their group and indentify two or more major causes and discuss steps for correction. In the end, each individual describes the problems from different sides and their solution. Furthermore, Slavin (2003: 277) enunciates that problem solving technique begins with careful consideration of what problem to be solved, what resources and what information are available, how the problem can be represented, and then broken into steps that lead to a solution.

So, it can be concluded that Problem Solving technique is the technique that is used to improve the abilities of students to use knowledge, facts, and data to effectively solve problems. By using this technique, the students could face their problems in their lives with critically way.

There are some rationales why Critical Thinking Skill through Problem Solving technique can be applied effectively in teaching writing skill. *First*, the Critical Thinking Skill through Problem Solving technique is very useful in a process of writing in creating many ideas. A critical thinker is someone who asks appropriate questions, addresses arguments, collects the relevant information to support their thought and belief, and not parallel to reject the incorrect, illogical or irrelevant information (Schafersman, 1991). Through Problem Solving technique the students' are stimulated to think critically. They learn how to face a problem, how to find the root of the problem, how to overcome that problem, and choose the best solution to overcome that problem. This technique can encourage students to express their opinions, ideas and solve their problem. Thus, writing process needs ideas and the ideas come from the thinking process in people's mind. That is why the critical thinking helps a writer to compose their ideas in mind as well as in writing.

Second, by using this Critical Thinking skill through problem Solving technique, it will be easy for them to develop their writing especially analytical exposition. By using this technique, they tend to have critical thinking in creating their ideas, and they also tend to stimulate their idea become systematically. So, it will be smooth for them to create their arguments with the facts and many examples in their writing task. Thus, they can organize good paragraph in their writing class.

Third, the Critical thinking Skill through Problem Solving technique can make the students have self-confident in facing many problems in their lives. In this technique they learn and discuss the

problem and how to see that problem from many perspectives. They were also stimulated to learn how to overcome that problem. So, they would be familiar with the problem surrounding them and it will be easy for them to face many problems in their lives.

Furthermore, Critical Thinking Skill through Problem Solving technique in writing provides opportunities to enhance the student's confidence, and motivation in delivering their ideas and solve their problem in life. As what Arju (2010:107) states:

“In EFL classroom, freehand writing followed by critical thinking activities is a common practice. Learners are asked to write about different issues so that they may acquire not only the ability to respond accurately on different occasions, but also to nourish the argumentative, descriptive, narrative, comparative, contrastive and analytical competence.”

Therefore, by using the Critical Thinking Skill through Problem Solving technique in writing it could develop the student's competence in language writing. It could be easy for the students to create their emotion, arguments, and their ideas in writing.

Considering the problem the writer conducted a research by using the Critical Thinking Skill through Problem Solving technique to find out its effect toward the fifth semester of students' writing skill at Adzkie Padang. This research used the procedure which proposed by Facione (in Snyder and Snyder, 2008:96). It is called *the six steps to Effective Thinking and Problem Solving*, or IDEALS. The IDEALS procedures are as follows: (1) identify the Problem: What is the real question we are facing?, (2) define the Context: What

are the facts that frame this problem?, (3) enumerate the Choices: What are plausible options?, (4) analyze Options: What is the best course of action?, (5) list Reasons Explicitly: Why is the best course of action?, (6) self-correct: Look at it again..... What did we miss?.

METHODOLOGY

This research used quasi-experimental design to test the hypothesis. The quantitative research used because the research is an experimental study manipulating at least one independent variable, controls the relevant variables, and observes the effect on one or more dependent variables (Gay and Airisian, 2000). In this research pretest-posttest design was employed. A pretest was given to both group (experiment and control) to see the group are parallel. At the end of the treatment, a post-test was administrated to both groups.

There were two groups involved in this research; one group as experimental group and the other as the control group. The experimental group was the group that received a new treatment taught by Critical Thinking Skill through Problem Solving technique. The control group was the group that continues existing method in which the students in this group were taught by Braistorming technique. In this research, the effect of Critical Thinking Skill through Problem Solving technique was investigated toward dependent variable namely English writing skill while motivation as the moderator variable. This research used *factorial 2x2 design*.

At very basic level, the difference between the experimental group and the control group was only about the techniques used. Despite of

this difference, both groups were given the same achievement-test, provided by the same learning material and allocated by the same time teaching and learning hours.

The population of this research was the 92 students of fifth semester of PGSD STKIP Adzka Padang for academic year of 2014/2015. They were grouped into three classes but not all of them were taken as the sample. The sample of this research was VA which consist 34 students as experimental class, and class VC which consist 32 students as control class. They were cluster random sampling selected.

Instruments used in this study was writing test. The writer used scoring rubric for students writing developed by O'Malley and Pierce (1996:145). They propose five components: composing, style, sentence formation, usage, mechanics. T-test analysis was used in analyzing the data.

DISCUSSION

The hypothesis is that “The students who are taught by Critical Thinking Skill through Problem Solving technique get better result in English Writing skill than those who are taught by Brainstorming technique.”

The result of writing skill t-test for both experimental and control class can be seen at Table below:

The Summary of t-test Students' Writing Skill of Experimental and Control Class

Variable	Class	N	\bar{X}	t-observed	t-table	Not
Writing	Experimental	34	10.7	4.387	1.671	t observed

Skill 1	men tal		21		1	ved > t table Hi: accepted
	Con trol	32	8.172			

The Table shows that the mean score of writing test of the experimental class was 10.721 and the control class was 8.172. From the Table, it was found that the $t_{observed}$ was 4.387. Whereas corresponding t for $dk=64$ required for significance at the 0.05 level was 1.671. Since the $t_{observed}=4.387$ was higher than t_{table} 1.671, it can be concluded that the t situated on rejected area of H_0 . It means that the alternative hypothesis (H_1)- writing skill of students who are taught by using the Critical Thinking Skill through Problem Solving technique is better than those who taught by using the Brainstorming technique- was accepted. The computed statistical calculation can be found at appendix 19.

The result indicates that the students who were taught by the Critical Thinking Skill through Problem Solving technique get better result than those who taught by the brainstorming technique in terms of their writing skills. It might happen because the students in experimental class get more opportunities to think critically and objectively about problem or phenomena surrounding them. By discussing the problem in group the students learn how to see, to find the root of the problem, and to overcome the problems in their lives. Up to this point, these findings are consistent with previous research (Shangarffam and Mamipour , 2011). They found that the students who have been taught how to think critically by means of critical thinking techniques

p-ISSN: 2355 - 1739
e-ISSN: 2407 - 6295

(debate, media analysis, and problem solving) were able to demonstrate their ability to analyze questions, problems, and information in better way in order to make use of them for other skills.

Teaching Critical Thinking Skill through Problem Solving Technique resulted the better effect on students' writing skills than the brainstorming technique. Based on the statistical analysis of hypothesis testing, there is the finding to discuss here. The detail interpretation is discussed below.

The Students Taught by Critical Thinking Skill through Problem Solving Technique Get Better Result in English Writing Skill than Those Taught by Brainstorming Technique.

Based on the result, it was found that the mean score of students' writing skill in experimental class who were taught by Critical Thinking Skill through Problem Solving technique was higher than mean score of students' writing skill in control class who were taught by Brainstorming technique. It may be caused by the technique that was used by the researcher gave many opportunities to the students to create many ideas related to the topics. They were free to give their own arguments about the topic those given. This was very important step for students before they came to the next steps of writing. After this step, it would be easy for them in doing their writing because they had many ideas in their mind and they knew exactly what they wanted to discuss in their writings. It could be said that the Critical Thinking Skill through Problem Solving Technique provided the significant effect toward the improvement of students' writing skill.

Furthermore, the result of the hypothesis explained that the Critical Thinking skill through Problem Solving Technique gave significant effect toward

students' writing skill than the brainstorming technique. This finding was in line with several theories and finding from previous studies by several experts. One of the previous findings is derived from research conducted by Halvorsen (2005). His study showed that the Critical Thinking Skill through Problem Solving Technique gave significant effect toward students' writing skill. It was proven by students' writing score in experimental class which was higher than students writing scores in control class. The Critical Thinking Skill through Problem Solving technique gave provided ample opportunities to the students to think critically and objectively about problem or phenomena surrounding them.

This was supported by Shangarffam and Mamipour (2011:122) who argue that the problem solving technique is the technique that offered students' opportunities to analyze an issue critically through the problem given to discuss. By discussing the problem in group the students learned how to see, how to find the root of the problem, and how to overcome the problem surrounding them. This technique are concerned with how the educators can improve the abilities of their students to solve the problem at school (Elliot et.al.,1996: 296). Therefore, this technique can stimulate their critical thinking. In addition, this technique was very useful for them to create many ideas for their writings and it was easy for them to develop their writings too, especially in analytical exposition text. This text type of text needed students' arguments that could be proven by fact and example. If the students were very familiar with the topic, it would be easy for them to build a good paragraph because they had a good frame in mind

on how to discuss the topic in their writings. It means that the Critical Thinking Skill through Problem Solving technique can be used as an alternative for teachers or lecturers to teach writing skills. It can be concluded that the Critical Thinking Skill through Problem Solving Technique could help students to improve their writing skills.

In contrast, students in control class who were taught by the brainstorming technique were not able to build a good paragraph. By using this technique, the students were stimulated to create many ideas related the topic. They were not taught on how to see the phenomena or overcome problem surrounding them. So, the students did not practice to create their critical thinking. They only learned how to create many ideas related to the topic given with no discussion on how to see and how overcome that problem. It happened because they did not know how to arrange their ideas in their writing and sometime they had no idea to continue their writing especially for analytical exposition. This type of text needed writer's arguments that could be proven by fact and example. So, if the writer was not familiar with this topic and never discussed it before, it would be difficult for them to arrange their ideas, or to build a good paragraph. It could be said that this technique made the students bored, not interested and frustrated in learning writing.

The data also shown that the Critical Thinking Skill through Problem Solving Technique was more effective than the Brainstorming technique to enhance students' writing skills from the mean scores of students' writing skills. It proves the Halvorsen's (2005: 1) statements that the classes which involve elements of critical thinking tend to be

generally interesting and engaging, and give the classroom a more meaningful and cohesive environment. The students who work together will be more likely to attend the classes and will be more active and involved in class discussion.

In addition, through this Problem Solving technique, students were forced to consider the real problems that influenced their daily lives in a critical way. As what Shangarffam and Mamipour (2011: 122) argue that problem solving technique is the technique that offered students opportunities to analyze an issue critically through problem given to be discussed. So, it becomes easy for them to arrange and make a good paragraph especially in analytical exposition.

From the discussion above, it can be concluded that the students who were taught by the Critical Thinking Skill through Problem Solving technique had better writing skill in analytical exposition than those who were taught teaching by the Brainstorming technique.

CONCLUSION

Based on the findings of this research which was conducted at fifth semester of PGSD STKIP Adzkie Padang, it can be concluded that the Critical Thinking Skill through Problem Solving Technique could solve the problem in writing analytical exposition text of students at STKIP Adzkie Padang. Moreover details conclusions of the research for teaching and learning can be seen as follow: students taught by the Critical Thinking Skill through Problem Solving technique get better result in English writing skill than those taught by the Brainstorming technique. This can be seen from the mean score gained at experimental and compared to control class. The students' mean score of

writing skills test in experimental class was higher than the students' in control class. As the t -observed = 4.387 is higher than t -table=1.671, it can be concluded that H_0 was accepted.

Based on findings, conclusions above, the researcher would like to suggest the following points:

1. From the research findings, the Critical Thinking Skill through Problem Solving technique was the effective way to improve students' writing skills at the fifth semester of PGSD STKIP Adzkie Padang. Therefore, English lecturers are recommended to apply this technique in teaching writing, especially an analytical exposition.
2. Although this study was only at STKIP Adzkie Padang, the Critical Thinking Skill through Problem Solving Technique also can be introduced and applied in any level of education. In other words, this technique is not limited only for teaching university students..
3. As this research was only limited to teaching analytical exposition text, it is suggested that other researchers should attempt to conduct the research about student's writing skills on other kinds of text such as hortatory exposition, argumentation and discussion text.
4. There are many techniques that can be used to teaching critical thinking, such as debate, media analysis, problem solving and questioning technique. Meanwhile, the researcher only used one technique in this research that was Problem Solving technique. It is suggested to other researchers to conduct the next research focused on debate, media analysis or questioning technique.

REFERENCES

- Arju, Sayma. 2010. Proposing Opinion Writing as A Practice of Critical Thinking: The Reading Matrix©2010, (Online) Volume 10, Number 1, April 2010, (www.readingmatrix.com/article/april_2010/arju.pdf, retrieved June 29th, 2012).
- Elliott, Stephen N. et. al. 2001. *Educational Psychology, Effective Teaching Effective Learning*. Dubuque: A Times Mirror Company.
- Facione, Peter A. 2011. Critical Thinking: What It is and Why It Counts. (Online), (<http://www.insightassessment.com/pdf-files/what&why2010.pdf>, retrieved on September 7th, 2012).
- Gay, L.R and Airisian, Peter. 2000. *Educational Research: Competencies for analysis and Application (6th ed)*. New Jersey: Prentice Hall
- Graham, S, &Perin, D. 2007. *Writing Next: Effective Strategies to improve writing for adolescents in middle and high schools-A report to Carnegie Corporation of New York*. Washington: Alliance for Excellent Education
- Halvorsen, Andy. 2005. Incorporating Critical thinking Skills development into ESL/EFL Courses, (Online), *The Internet TESL Journal*, Vol XI, No.3, March 2005, (<http://iteslj.org/Techniques/Halv>

orsen-criticalthinking.html.
Retrieved may 1st, 2012)

O'Malley, J. Michael & Piere Lorraine Valdez,. 1996. *Authentic Assessment for English Language Learners: Practical approaches for Teachers*. Boston: Addison-Wesley publishing Company.

Santrock, John W. 2012. *Educational Psychology*. Singapore:McGraw-Hill Companies, Inc.

Schafersman, Steven D. 1991. An Introduction to Critical Thinking, (online), (<http://www.Freeinquiry.com/critical-thinking.html>, retrieved on February 8th, 2008)

Shangarffam, Nacim and Mamipour, Maryam. 2011. The Impact of Teaching Critical Thinking on Intermediate EFL Learners' Writing Skill, (online) (<http://www.eurojournals.com/ajsr.htm>, retrieved on January 1th, 2012)

Slavin, Robert.E. 2003. *Educational Psychology. Theory and practice*. Boston: Allyn & Bacon.