

# **THE EFFECTS OF PROBLEM BASED LEARNING AND ACTIVE DEBATE METHODS ON THE CRITICAL THINKING SKILLS AND SOCIAL STUDIES LEARNING ACHIEVEMENTS OF STUDENTS OF PUBLIC JUNIOR HIGH SCHOOLS IN YOGYAKARTA CITY**

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## **Abstract**

The education quality improvement can be attained when teaching and learning processes carried out are really effective and useful. The teacher is one of the important factors in determining whether or not teaching and learning processes are successful. One of the creative and innovative steps in learning is the application or selection of an appropriate learning method. The application or selection of an appropriate learning method by the teacher is expected to improve students' critical thinking skills and learning achievements. This study aims to investigate whether or not there were effects of the Problem Based Learning and Active Debate methods on the students' critical thinking skills and Social Studies learning achievements. The success of learning through the application of the Problem Based Learning method can affect students' critical thinking skills and their learning achievements will improve. The application of the Active Debate method in Social Studies learning can effectively build students' critical thinking skills and learning achievements. The two methods are good to apply in Social Studies learning. Both are capable of improving the students' critical thinking skills and Social Studies learning achievements. The significance of the study is that it is expected to be a good input to improve students' critical thinking skills and learning achievements and to supplement learning methods supporting and needed in the learning process, especially the Social Studies subject.

**Keywords:** Problem Based Learning Method, Active Debate Method, Critical Thinking Skills, Learning Achievements

## **INTRODUCTION**

Learning is an effort process done by someone to achieve a change in fulfilling his needs. A competition in the future demands a high quality of education. Yet, in fact, Indonesia still owns a low quality of education compared to other countries in the world. This is shown by surveys mentioned by Organization for Economic Co-operation and Development (OECD) published in SINDO (Tuesday, May 19<sup>th</sup>, 2015) about Singapore which has the best education and Indonesia which is left behind. Singapore becomes a country having the best education system in the world. Among the Association of South East Asian Nations (ASEAN) community, Indonesia has been left behind compared to Vietnam, Thailand, and Malaysia. The fourth best rank countries having the best education system are Hongkong, South Korea, Japan, and Taiwan.

Based on the fact, a change and development are needed to realize in the implementation of education in this country. A general view about learning process conducted at schools is still considered to be low. The effects of this problem are students

tend to be less active which leads to less critical thinking analysis. A man thinking critically will be able to answer important problems appropriately, to answer clearly, and to solve problems effectively. One of the objectives of education is pointed that students will be provided with critical thinking skills.

Nursiti (2013) pointed that critical thinking is needed in life so that it is necessary to implement in learning. What has occurred at school is teachers emphasize the learning process only on subjects. Meanwhile, other aspects are often ignored including the critical thinking skills. In order to solve this problem, one of important ways needed is critical thinking skills which must be owned by students to face all challenges and problems happening in the society. In social sciences learning, the critical thinking skill is taught integratedly with subjects aiming at helping students to think critically and to be creative effectively. Through this critical thinking skills, students are able to analyze things which give advantages or disadvantages to himself, family, society, and nation in the future.

Slameto (2010: 54) stated that although there are many factors which influence learning outcomes, those can be divided only into two factors, namely internal and external factors. Those factors influence the students' learning outcomes at school. The main factor of learning disabilities is the internal factor including interest, talent, motivation, intelligence level, whereas the main factor of learning problems is the external factor including the implementation of a less appropriate learning method and the management of the learning process which does not motivate students to learn.

The development of the education quality will be achieved when the teaching-learning process which is conducted is effective and beneficial for the expected knowledge, attitudes, and skills. The success of education is related to the process involved. A teacher is one of the essential factors in determining whether the teaching-learning process is conducted appropriately or not. A teacher must be able to establish creative and innovative steps in the teaching-learning process in order to create a meaningful teaching-learning process. One of the creative and innovative steps which can be realized in the learning process is through an implementation or a proper learning method.

The implementation of an appropriate learning method which is conducted by a teacher is expected to improve the learning outcomes of students. As stated by Djamarah (2006: 158) the application of different types of teaching methods will be able to encourage students to learn that in a certain situation, a student is bored with a lecture method and therefore a teacher must be able to handle this situation by applying other methods such as question-answer method of teaching, discussion or an assignment method in order to relieve boredom and to create a teaching process which will be able to encourage students of being involved in the teaching-learning process. As well as the learning process of social sciences, since the social sciences subjects has a wide scope, a social sciences teacher must be able to determine various and appropriate methods in order to achieve the learning objectives and to create an interesting learning process.

Based on the observation which has been conducted by the researcher in January – February 2016 with social sciences teachers teaching at SMP Negeri 9 Yogyakarta and SMP

Negeri 15 Yogyakarta, it showed a similar problem which is a low learning activity affecting the critical thinking skills and the achieved learning outcomes which are still not optimal. The evidence of this problem was obtained from the data of niterview results with several social sciences teachers at SMP Negeri 15 Yogyakarta on January 28<sup>th</sup>, 2016 and at SMP Negeri 9 Yogyakarta on February 2<sup>nd</sup>, 2016, that the learning outcomes of social sciences students, particularly Year VII and VIII have not reached the optimal results even the level of Minimum Completeness Criteria (MCC) determined by schools in academic year of 2015/2016 which is 75,00. In term of social sciences learning, the number of students whose grades can reach the MCC of a class does not reach 100%. In a class of superior students, the number of students whose grades can reach the MCC is 75% whereas in a regular class, the number of students reaching the MCC is less than 50%.

As the problems mentioned above, it indicates the the ability of SMP Negeri di Kota Yogyakarta students in building knowledge by thinking thoroughly or the critical thinking skills and the ability of students in solving social sciences problems need to be improved. One of the methods which is able to improve the students' skills of thinking critically and the students' learning outcomes are Problem-Based Learning and Active Debate methods.

The various problems occured in the learning process of social sciences at those Junior High School in Yogyakarta has encouraged the researcher to conduct a research. As mentioned previously, therefore, the research entitled "The Effects of Problem Based Learning and Active Debate Methods on the Critical Thinking Skills and Social Studies Learning Achievements of Students of Public Junior High Schools in Yogyakarta City". This research will be beneficial for schools in ascertaining the effects of Problem-Based Learning and Active Debate methods towards the critical thinking skills of students, the influence of Problem-Based Learning and Active Debate methods towards the social sciences students' learning outcomes, and the effectsof Problem-Based Learning and Active Debate methods towards the critical thinking skills of students and the learning outcomes of social sciences students.

## **LITERATURE REVIEW AND PROPOSITION**

### ***The learning method of Problem-Based Learning, the learning method of Active Debate Learning, Critical Thinking Skills and Learning Outcomes***

The learning method of Problem-Based Learning is a learning method by providing students with practical problems as a step in learning or in other words students are learning through problems. According to McConnell (2002: 62), Problem-Based Learning is one of learning methods conducted in actual activities and it implies meaning that someone can learn by applying different learning styles. The actual learning focuses more on the participation to make choices to manage, to focus, and to give direction during the ongoing learning process. Problem Based-Learning is a teaching method using problems as a focus to develop skills of problem-solving, subjects, and self-regulation (Eggen & Kauchak, 2012: 307).

The statement is in line with the statement of Barge (2010: 7) pointing that a problem may include theory, practice, society, technique, cultural symbol or actual learning and

grows on students in line with the distinction of discipline and a good environment. A problem is the first step of a student in conducting the learning process and in learning to face a learning situation based on its context. According to Arends (Trianto, 2010: 92), Problem-Based Learning is a learning method where students doing authentic problems aiming at building their own knowledge as well as developing their thinking skills, self-confidence and independence.

McLinden, Mike, Steve, et al (2006: 334) have classified activities of the Problem-Based Learning into three terms which are widely connected, namely: (1) provision of information which are interconnected in the learning activities such as building teamwork among students in the research and finding sources, choosing, collecting, analyzing, presuming, and presenting; 2) collaboration and communication activities; and 3) assessment activities.

The objectives of the learning method of Problem- Based Learning are the learning content mastery of heuristic discipline and the development of problem solving skills. The learning method of Problem-Based Learning is also related to a widelife learning, a skill of implying information, collaboration, teamwork, and a skill of reflective and evaluative thinking (Rusman, 2010: 238).

In the education world, Active Debate learning can also be a valuable method to improve thinking and contemplation particularly when students are expected to be able to express an opinion which is basically against themselves (Silberman, 2006: 141). In line with the previous statement, Roestiyah (2008: 148) stated that when applying a technique or a method of debate presentation, which is a method that each speaker of pros and contras sides states their opinion which can be followed by a defense or not and the members of the group may also raise questions towards the debate participant or the speaker. The debate method is a teaching method facing students to problems. The main objectives of Active Debate learning method are to solve problems, to answer questions, to add and to understand knowledge of students, also to make a decision (Sanjaya, 2009: 154).

Critical thinking skills of students are necessary to develop in achieving success in their education life and in the society. Critical thinking skills can be developed or strengthened through the learning process. Gunawan (2003:177-178) stated that a critical thinking skill is a skill to think in a complex level and applies a process of analysis and evaluation. This skill is related to a skill to identify, to analyze, and to solve problems creatively, and to think logically, and therefore to produce appropriate decision and consideration. A critical thinking skill is not a skill which can develop by itself as the human body grows. This skill must be trained by giving a stimulant which demands someone to think critically.

Johnson (2007: 183) stated that thinking critically is an obvious and directed process which is used in a mental activity such as solving problem, taking decision, persuading, analyzing an assumption, and doing a scientific research. Similarly, Feldman also stated that(2010: 4) thinking critically includes actions to evaluate situation, to solve problem, and to choose an investigation pattern resulting in obtaining best answers. Thinking critically

will enable students to evaluate an opinion systematically, to solve problems systematically, and to design solutions originally.

This critical thinking development should be done by integrating it to the learning process at schools. Meanwhile, in fact, the learning process conducted at schools tends to less train students in thinking critically. A study result of introduction done by (Juano & Pardjono, 2016: 48) of one of Year 5 samples at SD Negeri Pujokusuman I Yogyakarta (elementary school) has shown that the students' comprehension is still low. Most of the students still have a low learning achievement. This is because the learning process does not involve students directly in terms of asking, discussing, and giving opinions to state results which have been obtained during the learning process which makes students afraid to state their own opinions in front of the class.

In a social sciences learning, these critical thinking skills are useful for students in dealing with a situation in the society recently. In this globalization era as the fast growing of knowledge and technology, various information can be obtained and accessed through the unlimited number of media. Those various information contain positive and negative things which directly or indirectly can influence students. Thus, by having critical thinking skills, students are expected not to receive information directly without selecting which one is useful or not to themselves (Anindyta & Suwarjo, 2014: 211).

The advantages of thinking critically as stated by Riah (2014: 20) are as follows: 1) obtaining knowledge, correcting theory, strengthening argument; 2) stating and formulating questions clearly; 3) collecting, assessing, and interpreting information effectively; 4) drawing conclusion and finding solution of problems based on a strong argument; 5) getting used to think openly; 6) communicating ideas, opinions, and solutions clearly to others.

This critical thinking skill is necessary for human life, through social sciences learning education it can shape students to become men who can think critically. As stated by Barell (2003: 22) who emphasized that a critical thinking skill is one of the important elements which must be achieved by an implementation of learning curriculum. Similarly, Hunter (2009: 36) stated that actually the main task of each education unit is to produce men who can think critically in accordance with their scientific field.

Social sciences learning must emphasize the comprehension and critical thinking, also learn on how to be involved in the learning process not to avoid it. Critical thinking skills can be trained through in-class learning process. This is strengthened by data results of a research obtained from a research conducted by Hestingsih & Sugiharsono (2015) in the social sciences learning in class VIII F SMP Negeri 1 Salaman Kabupaten Magelang that can improve the quality of learning. The number of students who reach "critical" criteria in a pre-cycle is 4. After actions, the number of students reaching "critical" criteria in cycle I is 14 or 58,33% (not reaching the criteria of actions success) and in cycle II is 22 or 91,67% (reaching the criteria of actions success).

The learning outcomes or achievement is commonly known also as success achievement, in this term it refers to the success of students when they are involved in the learning process at school. According to Sudjana (2011: 22) the learning outcomes are skills

belong to students after receiving their learning experiences. The learning outcomes are patterns of actions, values, understandings, behaviours, appreciations, and skills. According to Gagne (Suprijono, 2013: 5), the learning outcomes include: a) verbal information which is the capability in revealing knowledge in the form of language, both oral and written, b) an intellectual skill which is the skill to present concept and symbol, c) a cognitive strategy which is the ability to share and to direct his own cognitive activity, d) a motoric skill which is a skill to do series of physical movement in a direction and coordination, therefore, an automatism of physical movement is realized, e) an attitude is a skill to receive or to reject based on the assessment towards the object.

According to Bloom (Sudijono, 2013: 49) et al taxonomy (classification) of education objectives must always refer to three kinds of domain (the construction area or domain) of students, namely: 1) cognitive domain, 2) affective domain, and 3) psychomotor domain.

### ***Cognitive Domain***

According to Bloom (Sudijono, 2013: 49-50) stated that cognitive domain is a domain which includes mental activity. All activities related to the brain activity are included in the cognitive domain. In the cognitive domain, there are six levels of thinking process, starting from the lowest to the highest levels. Those six levels are: 1) knowledge, 2) comprehension, 3) application, 4) analysis, 5) synthesis, and 6) evaluation.

Bloom's taxonomy of cognitive domain which has been revised by Anderson & Krathwohl (Gunawan & Palupi, 2012: 11-15) includes: 1) remembering, 2) understanding, 3) applying, 4) analyzing, 5) evaluating, and 6) creating.

### ***Affective Domain***

Affective domain is a domain related to attitude and value. Some experts stated that someone's attitude can be predicted its changes when he has reach a high level of cognitive. The characteristics of affective learning outcomes can be seen on students in various kinds of attitudes. This affective domain as stated by Krathwohl, et al (Anas Sudijono, 2013: 54) is classified more specifically into five levels, namely: 1) receiving, 2) responding, 3) valuing, 4) organizing, and 5) characterizing by a value or value complex.

### ***Psychomotor domain***

Psychomotor domain is a domain related to skills or an ability to act after someone has received certain learning experiences. The learning outcomes of psychomotor domain are stated by Simson (Sudijono, 2013: 57-58) stating that the learning outcomes of this domain can be seen in the form of skills and an individual skill to act. The learning outcomes of this psychomotor are actually the continuance of the cognitive learning outcomes (understanding something) and the affective learning outcomes (that are just seen in the form of tendencies to behave). The learning outcomes of cognitive and affective will be the psychomotor

learning outcomes when students have shown certain behaviors or actions in accordance with the meaning contained in the cognitive and affective domain.

The application of the learning method of Problem- Based Learning and Active Debate in the social sciences learning is necessary. The learning method of Problem- Based Learning focuses on the students to solve problems and focuses on students to be actively involved in the learning activity and to encourage students to be more creative in solving problems. Meanwhile, the learning method of Active Debate help students to share ideas and opinions. The learning by applying this method will be able to encourage thinking and reflection. In this case, students are expected to defend their opinion against their own believes. This method actively involves each student in the class not only the debaters. Thus, this implementation of the learning method of Problem-Based Learning and Active Debate learning method in the social sciences learning can improve students' critical thinking and the learning outcomes at state junior high schools in Yogyakarta.

### ***Problem-Based Learning***

In the learning of junior high school social sciences, a teacher decides problems, presents information, prepares materials, and determining ways to solve the problems. Therefore, students must memorize many information, and then open their memory in an examination. The abundance information that must be memorized in a learning definitely can be maintained by students after the learning process is conducted. This will influence the critical thinking skills and the learning outcomes of students.

One of the learning methods which is often applied in the social sciences learning is Problem-Based Learning. The learning by applying this method of Problem-Based Learning provides freedom to students in the learning process. Through the learning method of Problem-Based Learning, students must be able to identify problems, to collect data, and to use those data to solve problems. By applying the learning method of Problem-Based Learning, the higher the level of freedom given to students, the higher the need of guidance which must be conducted by the teachers.

Problem-Based Learning is a method of teaching which uses problems as a focus to develop skills of solving problems, subjects, and self-regulation. The learning method of Problem-Based Learning focuses on students to solve problems and to be actively involved in solving problems which are faced. By using these skills, it will influence the learning outcomes in the learning.

According to Ibrahim and Nur (Rusman, 2010: 243), these are steps of the learning method of Problem-Based Learning: 1) observing students on problems, 2) organizing students to learn, 3) guiding the experiences of individual/group, 4) developing and presenting the outcome of a work, 5) analyzing and evaluating the process of problem solving. Arends (2007: 56-60) stated that the learning method of Problem-Based Learning consists of five main phases. Those phases refer to practical steps conducted in the learning activities. These are steps conducted in the learning method of Problem-Based Learning in the social sciences learning: 1) giving orientation about the problems to students, 2)

organizing students to observe, 3) assisting an investigation of individual and group, 4) developing and presenting artifacts and exhibits, 5) analyzing and evaluating the problem-solving process.

In this case of guidance, a teacher or an expert changes its role to become a facilitator or a guide in this method, and the students are involved intensively, so that the motivation to keep learning and to be curious improves. Thus, the effects of applying the learning method of Problem Based Learning are the critical thinking skills and the learning outcomes of students improve.

**Proposition 1:**

**“The success of learning by applying the learning method of Problem-Based Learning can influence the critical thinking skills and the learning outcomes of students will improve”**

***Active Debate***

Nowadays, most of the learning still applies a lecture method (conventional) so that the learning is teacher-oriented not student-oriented. This causes students to tend to be passive and not to be actively involved in their learning activity. A teaching-learning process is demanded to involve an active role of teachers and students that is able to accustom students to be directly involved in the teaching-learning process in accordance with their own skills and ways of thinking. When teachers only apply the lecture method, this will result in achieving less maximum critical thinking skills and learning outcomes.

The learning method of Active Debate helps students to share ideas and opinions. The advantage of applying this method is the power to raise mental bravery in speaking and being responsible for the knowledge they have obtained through the process of debate, both inside or outside the class (Zaini, et al, 2006: 38). Simply, the active debate aims at influencing attitudes and people’s opinion or other sides so that they can be convinced and eventually can conduct, act, follow or at least shows tendencies in accordance with what the speaker or the writer wants, looking at the type of communication, oral or written.

According to Zaini (2006: 38-39), the following steps are applied in this kind of method: 1) develop a controversial issue related to the subjects, 2) divide class into two groups, namely pros and cons, 3) Next, create two to four sub-groups of each debate group, 4) ask each group to point the representative, two or three members as the speakers seating face-to-face, 5) prepare two to four chairs for the speakers in each group of pros and cons. Other students seat behind the speakers, 6) After listening to the opening argument, stop the debate and get back to the sub-groups for preparing arguments, countering the opening arguments of the opposite team, 7) get back to the debate, 8) Make sure that the class is integrated by asking them to seat side by side with those in the opposite team, then discuss what the students have learned from the debate experience and ask students to identify the best argument according to them.



In this case, teachers' creativity is needed so that they are able to play roles as the facilitator and the learning partner of students. The teachers' task is not only to deliver information to students, but they must be more creative in facilitating learning to all students. By applying this learning method of Active Debate, students can learn in a fun situation, energetic, unworried, and brave to express their opinion openly. Thus, the critical thinking skills and the learning outcomes which are obtained can improve by applying this learning method of Active Debate.

**Proposition 2:**

**“The application of the learning method of Active Debate in the social sciences learning can effectively build the critical thinking skills and the learning outcomes of students.”**

***Problem-Based Learning and Active Debate***

Students who have the skills to think critically will get many advantages, not only in the learning environment at school, but also in the society or later in the workplace. This statement is similar to Feldman's statement (2010: 4) that the advantages obtained by thinking critically in the workplace are: 1) developing the best solution to solve problems; 2) obtaining a better understanding about the motives of others; 3) giving a good argument to create commitment to your idea; 4) identifying an important topic by keep focusing on the problems; 5) writing and speaking with a strong influence.

The enthusiastic of students in the learning process by applying the learning methods of Problem- Based Learning and Active Debate is high. This is reflected during the process of discussion and group presentation resulting in the learning outcomes. Furthermore, the learning method of Problem-Based Learning according to Sanjaya (2009: 220-221) is berikut: 1) a good method to understand the content of subjects, 2) able to challenge the students' skill for getting new knowledge, 3) able to improve the learning activities, 4) assisting students to transfer their knowledge in the real life, 5) considered to be more fun and chosen by students, 6) giving opportunities to students for implementing their knowledge in the real life, 7) able to develop the students' interest to keep learning.

Meanwhile, the advantages of applying the learning method of Active Debate according to Roestiyah (2008: 148) are: 1) by conducting a tough debate, it will sharpen the result of discussion, 2) both problems are presented, the one having ideas and debating or opposing, both sides debate to find the more appropriate result of a problem, 3) students are motivated to analyze problems in a group as guided so that the analysis is directed to the main problem, 4) students can state facts from both sides of the problem, then the fact will be researched on which is correct or valid and can be justified, 5) since there is an active discussion between both sides, therefore it will raise the interest to get involved in the discussion to speak, to participate in giving arguments, 6) when the debated problem is interesting, therefore the discussion is able to maintain the students' interest to keep following the discussion, 7) this learning method can be used in a large group.

The learning methods of Problem-Based Learning and Active Debate are able to improve the critical thinking skills and the learning outcomes of social sciences students at state junior high schools in Yogyakarta. Those methods involve students to behave cooperatively and proactive in the learning activities and assist students to understand the social sciences subjects being taught. The learning process is planned well (by applying the learning methods of Problem-Based Learning Active Debate) and the students have high critical thinking skills to learn the related subjects, and therefore they will achieve optimal learning outcomes.

**Proposition 3:**

**“The effects influence of the learning methods Problem Based Learning and Active Debate are good to be implemented in the social sciences learning that those two methods are able to improve the critical thinking skills and the social sciences learning outcomes of students.”**

**DISCUSSION**

The development of the education quality will be achieved when the teaching-learning process which is conducted is effective and beneficial for the expected knowledge, attitudes, and skills. One of the goals is social studies includes the basic ability to think critically. Therefore, the ability of students' critical thinking is needed in social studies learning. The application or the selection of appropriate learning methods that teachers are expected to improve student learning outcomes. The learning method used is the method of Problem Based Learning teaching and learning methods Active Debate.

The success of learning by using learning methods Problem Based Learning in the coaching of teachers changing role of the teacher or an expert to become a facilitator or mentor. Students are required to be involved very intensive, so the motivation to continue to learn and find out be increased. Meanwhile using Active learning methods Debate teacher's task is not only to convey information to students, but to be more creative to provide service and ease of learning to all students. Through the implementation of this Debate Active learning methods students can learn in a pleasant atmosphere, full of enthusiasm, not anxious, and dare to express opinions openly. The learning methods of Problem-Based Learning and Active Debate are Able to improve the critical thinking skills and the learning outcomes of social sciences students at state junior high schools in Yogyakarta.

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