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The Impact of Discovery Learning and Critical Thinking towards Learning Outcomes of Indonesian History

ABSTRACT: *The impact of discovery learning and critical thinking towards learning outcomes of Indonesian History. This research aims to find the influence of learning model of Discovery Learning and critical thinking on the learning outcomes of Indonesian History. The research was conducted at the SMKN (Sekolah Menengah Kejuruan Negeri or Public Vocational High School) 7 in Tangerang, Banten, Indonesia, on the academic year of 2017/2018. The research method used was quasi experiment, with factorial design 2x2. Data analysis techniques used Two Ways ANOVA (Analysis of Variance) and Tukey test analysis. The sample involved 72 students, who were selected using "random sampling". The respondent variable consists of critical thinking; and measurements were made using a questionnaire related to critical thinking. The results showed, as a whole, that the students who were treated with Discovery Learning model showed high learning outcomes, when compared to those who were given the Direct Learning model; groups of students who have high learning independence and they receive the Discovery Learning has a higher learning outcomes in Indonesian History compared to those given the Direct Learning; groups of students who have low learning independence and they receive the Direct Learning have higher learning outcomes in Indonesian History compared to those studied in Discovery Learning; and, ultimately, there is an interaction effect between the learning model and the learning independence of the learning outcomes of Indonesian History.*

KEY WORDS*: Model Learning; Discovery Learning; Critical Thinking; Learning Outcomes; Indonesian History.*

INTRODUCTION

Education is one of a planned and conscious attempts to realize a learning environment and learning progress, so that students can actively develop their potential in terms of spiritual strength, religious, self-control, personality, intelligence, morals, and the skills needed by oneself, the society, nation, and country. This is stated in the Law, Number 20 Year 2003, concerning on National Education System in Indonesia, which is certainly needed to be realized in order to reach a noble end (*cf* Hufford, 2005; Azhar, 2017; and Wahyudin & Suwirta, 2017).

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Nowadays, our education system has been directed toward the 21st century learning system, which demands the students to be active, creative, and innovative during the learning process. Activeness, creativity, and innovation are the manifestation of student's role as the subject of education, while teacher has the role of facilitator and learning sources. A teacher must be able to show competencies in delivering materials accurately, delightfully, and effectively. Therefore, a teacher has to be able to select and to master the most suitable learning model in order to create a memorable learning process for the students (Singh, 1991; Rotherham & Willingham, 2009; and Silva, 2009).

The emerging problem in the learning process in the field is not entirely as simple as the explanation above. Particularly for the subject of Indonesian History, which tends to be passive and monotone, for the reason that teachers think history needs to be told. The learning activity process seem to be going one-way (teacher-centered), where teachers only explains material using a conventional learning system; while students only listen to them and take notes while the teachers are delivering the material (Drake & Nelson, 2005; Hasan, 2013; and Slamet, 2017).

This is visible during an early observation conducted in the SMKN (*Sekolah Menengah Kejuruan Negeri* or Public Vocational High School) 7 in Tangerang, Banten, Indonesia. It is found that the daily learning process and the level of activeness in the classroom is lacking. In addition, the 2017 revision on 2013 Curriculum of Indonesian History subject in the level of vocational high school is only carried out 3 hours per week in Class X using a dense material. That is a challenge for the teachers to figure out an effective formula, so that students can actively participate in the learning process. This obviously affects the learning outcomes of students in Class X to be relatively low on the subject. The fact on the field shows that the learning process in the SMKNs' focuses more on the productive than adaptive subjects; and one of the examples is the Indonesian History subject.

A teacher is, other than the implemented learning model, one of the important learning sources in the learning process. However, nowadays, teacher-centered learning system results in student's low in critical thinking ability. One of the causes is students are not given enough chances to develop their critical thinking ability. History learning has an important role in shaping a strong nationality and will be able to motivate students to think critically and develop their sense of nationality (Drake & Nelson, 2005; and Westbrook *et al*., 2013). The learning objective, as stated by Said Hamid Hasan (2012), aims to:

> [...] develop thinking ability, curiosity, creative thinking ability, heroic behavior, spirit of nationality, social awareness, communication skill, and the ability to seek, process, summarize, and communicate the information (Hasan, 2012:7).

A teacher has an important role in motivating students to keep developing and actively participating in the learning process. That way, the learning process is not only carried out one way, but two ways instead. Furthermore, students will be more active than the teacher in digging out information. This kind of situation will make students comfortable in studying, so that the learning process will not be boring (Drake & Nelson, 2005; Silva, 2009; and Westbrook *et al*., 2013).

In order to realize this, Indonesian History learning is expected to let students be independent in analyzing the discussed material further. Indonesian History learning at school does not only provide knowledge, but also contributes to raise historical awareness. Therefore, history teachers are expected to maintain their consistency in developing student's motivation to study history, even though we cannot deny that there are a lot of concurring problems in the field when it comes to the classroom learning implementation (Drake & Nelson, 2005; Thorp, 2014; and Fahruddin & Sugiyono, 2018).

There are a lot of interesting learning models to get students to perceive the learning material in a more meaningful way. Among them is the model of "Discovery Learning", which demands the students to

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be active, while the teacher are to remain facilitator in the learning process (*cf* Brown, 2006; Nguyen, 2009; and Hasan, 2013). This is supported by the statement of Agus N. Cahyo (2013), in his book, that Discovery Learning is a learning system that involves students in a mental process through opinion sharing, discussion, independent reading, and practice to make them learn independently (Cahyo, 2013:101).

There has been a research that explains that the Discovery Learning is one of the models that serves as the answer to why history learning is boring. Discovery Learning model has an important impact in the improvement of students learning outcomes and students critical thinking ability. A learning process that utilizes Discovery Learning model and emphasizes student's critical thinking ability is expected to improve student's learning outcomes. This is because Indonesian History learning is not all about memorization, but encouraging the students to be able to solve the problems presented by teachers (Drake & Nelson, 2005; Ahmad & Suwirta, 2007; Hanurawan & Waterworth, 2011; Moore & Parker, 2012:24; Paul, 2012; Hasan, 2013; Thorp, 2014; Awang *et al.,* 2016; Suendartia, 2017; and Fahruddin & Sugiyono, 2018).

Based on the analysis above, it is hypothesized that the learning model and student's critical thinking ability has an impact on Indonesian History learning outcomes. Therefore, a teacher needs to try a more active and creative learning process in the class, so that it can stimulate students to think more critically that is expected to improve learning outcomes in the subject of Indonesian History.

On the Indonesian History's Learning Outcomes. Learning outcomes is significantly related to student's achievements in the learning process. Therefore, learning outcomes is also significantly related to what kind of objective is pursued, how the result is gained, as well as the factors that contribute to the matter. Learning outcomes is gained when an objective is actualized into a form of behavior and into the change of one's personality after the learning activity is done (Vey, 2005; Taurina, 2015; and Sudjana, 2017:22). Learning outcomes also represent the ability that a student has after they receive a material in their learning experience. Study assessment process can provide information to teachers regarding the student's development, in order to meet the previously arranged learning objectives (Felder & Brent, 2005; Mukhtar & Yamin, 2008:25; and Sudjana, 2017).

Learning outcomes are inseparable from the knowledge obtained by students. The dimension of knowledge is divided into four aspects: (1) *Factual Knowledge* that consists of specific and technological knowledge; (2) *Conceptual Knowledge* that consists of classification and categorization of principals and generalization, theoretical knowledge, models, and structures; (3) *Procedural Knowledge* that consists of specific skills, specific technical knowledge, and methods; and (4) *Metacognitive Knowledge* that consists of strategic knowledge, cognitive tasks, and self-knowledge (Anderson & Krathwohl, 2001:29-31).

Which aspect to be selected as a measurement will depend on the requirements and objectives that teachers want to achieve. Affective assessment includes attitude scoring, while psychomotor assessment relates to the learning outcomes skill and the ability to make actions. Furthermore, according to Benjamin S. Bloom (1979), the change of behavior that occurs within a learning process includes the change in cognitive, affective, and psychomotor domains (Bloom, 1979:7).

The Indonesian History's learning outcomes is a representation of the changes that students experience after participating in a learning process signified by mastery in certain learning objectives (Westbrook *et al*., 2013; and Rahman, 2016). In this context, Wina Sanjaya (2010) states that competency is a combination of knowledge, skills, values, and attitude which are reflected into the habit of thinking and making actions (Sanjaya, 2010:70).

Indonesian History learning outcomes has to be related to the History of Indonesia subject, provided that expected learning outcomes will not be achieved without a

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proper learning process. I Gde Widja (1989) and others stated that Indonesian History learning is a combination of learning and teaching activity that studies an occurrence in the past that has strong connection with the present day, since the present day is the representation of a meaningful past (Widja, 1989:23; Westbrook *et al*., 2013; and Rahman, 2016).

Based on the literature review above, Indonesian History learning is defined as the ability owned by students within the cognitive area of the knowledge dimension (*cf* Ahmad & Suwirta, 2007; Kuh, 2014:4; and Awang *et al.,* 2016). The learning outcomes is obtained at the end of a learning process that is determined for a period of time as a product of activities or learning experiences, both acquired inside or outside the class and is represented by a final score.

On the Discovery Learning Model. The writers attempt to deliver the material using one of the learning models that requires students to be active in the class and, thus, improve the learning outcomes. It is called the Discovery Learning model. The model demands students to be more active by independently finding and analyzing a learning material. This is done so that the acquired material will be sustained longer (Hammer, 1997; Mayer, 2004; and Brown, 2006). This is supported by Robert E. Slavin (2011a), as following here:

> In Discovery Learning, students are encouraged to learn mostly through their own active involvement with concepts and principles; and teachers will motivate the students to seek for experience and try other activity that allows them to find principles themselves (Slavin, 2011a:275).

It has been said in the explanation above that in the model, students are encouraged to seek for as much data as possible, to process concepts, and to solve their own problems (Alfieri *et al*., 2011; Dorier & Garcia, 2013; and Sani, 2014:99). This very much demands participation from students in the learning process; and there is no teacher domination in the Indonesian History subject. Teachers act as facilitator in the learning process, so that they can help create an active and conducive class (Ahmad & Suwirta, 2007; Kuh, 2014; and Awang *et al.,* 2016). This is supported by Agus N. Cahyo (2013), who explains in his book that Discovery Learning is a learning system that involves students in a mental process through opinion sharing, discussion, independent reading, and practice to make them learn independently (Cahyo, 2013:101).

In addition, according to Fred J.J.M. Janssen, Hanna B. Westbroek & Jan H. van Driel (2014), Discovery Learning begins with bringing forward a challenging issue (Janssen, Westbroek & Driel, 2014). Then, students have to contribute in receiving sufficient sources in developing the required knowledge (Hosnan, 2014:92). Discovery Learning model helps to keep them motivated by developing a flexible knowledge and by learning how a knowledge is developed in certain problems (*cf* Hammer, 1997; Mayer, 2004; and Brown, 2006; Hosnan, 2014; and Janssen, Westbroek & Driel, 2014:68).

This model emphasizes children's ability to independently manage information and to solve the problems within. According to F.H. Bell (1981), as cited also in Eni Arniwati, Slamet & Chundari (2014), Discovery Learning model is a result of student manipulating, creating structure, and transforming information in a certain way until they find new information. In Discovery Learning, students can make conjectures, formulate a hypothesis, and find the truth by using inductive or deductive process, conducting observation, and making extrapolation (Bell, 1981:67; and Arniwati, Slamet & Chundari, 2014:2).

This is also supported by David Hammer (1997), who said that Discovery Learning is a learning model that encourages the students to think critically and to seek for meaning using a predetermined guide by teachers. He, then, states as following here:

> Discovery learning approaches, in particular, are designed to engage students in inquiry through which, guided by the teacher and materials, they "discover" the intended content. Still, the tension remains, for example, in moments when students make discoveries other than as intended (Hammer, 1997:485).

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Furthermore, Rebecca Reynolds & Idit Harel Caperton (2011) stated that Discovery Learning model encourages students to cooperate using a premade syllabus and topics arranged by teachers (Reynolds & Caperton, 2011:272). Discovery-based learning has actually been implemented long ago in learning process, and is keep developing and being refined. This is explained by Paul A. Kirschner, John Sweller & Richard E. Clark (2010) as follows:

> [...] recently reviewed evidence from studies conducted from 1950 to the late 1980s comparing pure discovery learning, defined as unguided, problem-based instruction, with guided forms of instruction. Asimilar approach popped up under a different name with the cycle then repeating itself. Each new set of advocates for unguided approaches seemed either unaware of or uninterested in previous evidence that unguided approaches had not been validated. This pattern produced discovery learning, which gave way to experiential learning, which now gives way to constructivist instructional techniques (Kirschner, Sweller & Clark, 2010:79).

On the Direct Instruction Learning Model. Direct Instruction is a learning process that has been widely used and is favored by school teachers. This model is teacher-centered (Magliaro, Lockee & Burton, 2005; and Rosenshine, 2008:1). Direct Instruction is one of the learning approaches that is specifically designed to support student's learning process in relation to a well-structured declarative and procedural knowledge that is taught to students using activity patterns gradually (Magliaro, Lockee & Burton, 2005; and Trianto, 2007:29).

Meanwhile, according to La Iru & La Ode Safiun Arihi (2012) and R. Killen (2015), Direct Instruction model is an expository learning technique, direct transfer of knowledge from teacher to student, ect., through lectures, demonstration, and question and answer sessions, that involves the entire class (Iru & Arihi, 2012:155; and Killen, 2015).

In Direct Instruction model, student's initiative to seek evidences without any compulsion from the teachers is considered to be the student's free will. This is reinforced in David Dean, Jr. & Deanna Kuhn (2007), as following here:

> [...] intention is to demonstrate that Direct Instruction is a more effective means of acquiring the control-of-variables strategy than is "discovery learning", which they define as the student discovering or constructing this skill for him self or her self (Dean, Jr. & Kuhn, 2007:385).

Direct Instruction does not actually go in line with the objectives of 2013 Curriculum, which encourages students to be more active than teachers in the learning process. In reality, students fully believe the teachers to determine whether an answer to a question is right. This is supported by Kenneth D. Moore (2005), saying that Direct Instruction is often referred to as a teacher-centered systematic teaching and focuses on teacher as the main information provider in building student's skills (Moore, 2005:227).

Students exposed to this model, particularly in Indonesian History subject, will have the perspective that this subject is all about memorizing years, characters, and occurrences presented by teacher. As a result, students are kept away from being independent in searching for knowledge sources that is actually very good for them (Ahmad & Suwirta, 2007; Elistiana, 2014:149; and Slamet, 2017).

So, direct material delivery by teachers in Direct Instruction model is the measurement of success to students in the learning process. Teachers act as the information transferors to students, while students remain passive listener as long as the learning process continues. In addition, students' understanding level is generated based on memorization. The method used is lectures, examples, and problem sheets (Hammer, 1997; Mayer, 2004; Brown, 2006; and Ahmad & Suwirta, 2007).

On the Critical Thinking. Critical thinking ability is the manifestation of learning behavior, especially those in relation to problem solving. One of the expected abilities once a learning process has completed is that students will be able to think critically (Walker, 2003; and Johnson, 2009:183). Robert E. Slavin (2011b) also states that

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Table 1:
Experiment Design with Treatment by Level 2x2

Critical Thinking	Learning Model	
	Discovery Learning (A1)	Direct Instruction (A2)
High (B_1)	A_1B_1	A_2B_1
Low (B_2)	A_1B_2	A_2B_2

Description:

A_1	:	Group of students that participate in the Discovery Learning model.
A_2	:	Group of students that participate in the Direct Instruction model.
B_1	:	Group of students with high critical thinking ability.
B_2	:	Group of students with low critical thinking ability.
A_1B_1	:	Group of students with high critical thinking ability and participate in the Discovery Learning model.
A_2B_1	:	Group of students with high critical thinking ability and participate in the Direct Instruction model.
A_1B_2	:	Group of students with low critical thinking ability and participate in the Discovery Learning model.
A_2B_2	:	Group of students with low critical thinking ability and participate in the Direct Instruction model.

the key learning is to raise student's critical thinking ability and make rational decision that is related to work or whatever they believe in (Slavin, 2011b:40).

The Indonesian History learning does not rely solely on information acquirement that is identical to memorizing years and figures, but instead managing the obtained information. The information management process is, then, realized into the form of delivering questions, responding to questions, analyzing the sources, interacting, and decision making (Drake & Nelson, 2005; Ahmad & Suwirta, 2007; Hanurawan & Waterworth, 2011; Moore & Parker, 2012:24; Hasan, 2013; Thorp, 2014; Awang *et al.,* 2016; and Fahruddin & Sugiyono, 2018).

Critical thinking means thinking evaluatively where people are able to show their ability in seeing the differences between reality and facts regarding ideals. They are also alert to analyze and evaluate the steps of problem solving, and also to implement an idea in everyday actions in any environment according to the prevailing norms (Walker, 2003; Johnson, 2009; and Slavin, 2011b).

Jalaludin Rakhmat (2008) states that, in general, there are two types of thinking: autistic thinking or day dreaming; and realistic thinking or reasoning (Rakhmat, 2008). Realistic thinking is divided into three types: (1) *deductive reasoning*, the type of mental activity that begins with general things and goes into the specific things; (2) *inductive reasoning*, a mental activity that begins with specific things and goes into the general things; and (3) *evaluative thinking*, including critical thinking, a mental process in judging whether something is right or wrong and whether an idea is appropriate or not (Rakhmat, 2008:69).

It can be concluded that critical thinking is the ability of advanced thinking and, therefore, needs to be developed using a practice that aims to lead student's critical mindset (Silbelman, 2013:25). There are four aspects of critical thinking: problem identification ability; information assessment ability; problem solving ability; and conclusion drawing ability (Hamby, 2007; Mulnix, 2010; and Moore & Parker, 2012).

METHODS

The method used in this research is an experiment with treatment by level 2x2 design (Christensen, 1988; Johnson & Christensen, 2000; and Landsheer & Wittenboer, 2015). The variable in this research consists of two independent variables: Discovery Learning model and Direct Instruction model. The dependent variable is the Indonesian History learning outcomes. This is an experimental research with an experimental group using Discovery Learning model and one control group using Direct Instruction model (*cf* Cobern, Schuster

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Table 2:
Hypothesis Testing of Indonesian History Learning Outcomes between Students Using Discovery Learning Model and Direct Instruction Model

Class Group	F-count	F tabel
		α = 0,05
A_1 and A_2	24.472	408

Description:
A_1 : Discovery Learning model.
A_2 : Direct Instruction model.

& Adams, 2010; Furtak *et al*., 2012; and Gurses, Demiray & Dogar, 2015). See table 1.

***Data Analysis Techniques and Hypothesis*.** The result of data collection is, then, analyzed according to each research objectives. Data analysis in this research consists of two parts: descriptive analysis and differential analysis. Descriptive analysis is conducted by presentation of distribution table, histogram, averages, and standard deviation. Hypothesis testing is done using ANOVA (Analysis of Variance). Before ANOVA is done, a homogeneity test and normality test are needed to be done first (Gelman, 2005; and Cox, 2006).

Normality test is needed to find out whether the data of students learning outcomes in each group is in normal distribution. Normality test in this research uses the lilliefors test. Homogeneity test is needed to find out whether the data of Indonesian History learning outcomes between sample groups are homogenous. Homogeneity test in this research uses the M.S. Bartlett (1937)'s test (*cf* Bartlett, 1937; Mu, 2006; and Wang *et al*., 2017).

At the end of the analysis, shall there be any difference and significant interaction between the independent variables, further analysis is needed to examine which group is higher using the John Tuckey (1949)'s test (*cf* Tukey, 1949; Kao & Green, 2008; and Kim, 2014). The statistical hypotheses in this research are:

First, Differences in Indonesian History learning outcomes between students that participate in the Discovery Learning and Direct Instruction model. The hypothesis is following here:

$$H_0: \mu_{A1} \leq \mu_{A1}$$
$$H_1 : \mu_{A1} > \mu_{A2}$$

Second, Impact of interactions between learning models and critical thinking ability on the Indonesian History learning outcomes. The hypothesis is following here:

$$H_0 : INT.\ A \times B = 0$$
$$H_1 : INT.\ A \times B \neq 0$$

Third, Difference in Indonesian History learning outcomes between students with high critical thinking ability and participating in Discovery Learning model and students with high critical thinking ability and participating in Direct Learning model. The hypothesis is following here:

$$H_0 : \mu_{A1B1} \leq \mu_{A2B1}$$
$$H_1 : \mu_{A1B1} > \mu_{A2B1}$$

Fourth, Difference in Indonesian History learning outcomes between students with low critical thinking ability and participating in Discovery Learning model and students with low critical thinking ability and participating in Direct Learning model. The hypothesis is following here:

$$H_0 : \mu_{A1B2} \geq \mu_{A2B2}$$
$$H_1 : \mu_{A1B2} < \mu_{A2B2}$$

RESULTS AND DISCUSSION

Results. From the first hypothesis of the 2x2 ANOVA (Analysis of Variance) calculation, it is known that the F-count is 8 for the learning model with a score of 8.966, while the F-table is 4.20 on the significance level of α = 0.05. Since the value of F-count >

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Table 3:
Hypothesis Testing Results on the Impact of Interaction between Use of Learning Model and Critical Thinking

Class Group	F_{count}	F_{tabel} α = 0,05
A_1 B_1 and A_2 B_2	86.382	4.08

Table 4:
John Tuckey's Test Result

Class Group	Q-count	Q-tabel α= 0,05	Conclusion
Q3: A_1B_1 and A_2B_1	14.24	4.04	Reject Ho
Q4: A_1B_2 and A_2B_2	4.35	4.04	Reject Ho

F-table, then H_o is rejected and H_1 is accepted. It means that there is a difference in the learning outcomes of Indonesian History subject between students using Discovery Learning model and students using Direct Instruction model. The result of hypothesis testing can be seen in the table 2.

From the F-count, it is inferred that there is an impact of Indonesian History learning outcomes between students using Discovery Learning model and Direct Instruction model. The average score of Discovery Learning model (A_1) is 34.77, while the average score of Direct Instruction (A_2) is 31.77. It is concluded that the learning outcomes of Discovery Learning model is higher than the Direct Instruction model.

In the second hypothesis, there is an impact of interaction between use of learning models and critical thinking ability on the Indonesian History learning outcomes. The hypothesis is statistically formulated as follows:

H_0: *INT. A x B = 0*
H_1: *INT. A x B ≠ 0*

Description:
H_0: There is no impact of interaction between use of learning model and students' critical thinking ability on Indonesian History learning outcomes.
H_1: There is an impact of interaction between use of learning model and students' critical thinking ability on Indonesian History learning outcomes.

The result of ANOVA (Analysis of Variance) calculation can be seen as follows: F_{count} for interaction factor is 86.382 bigger than F_{table} 4.08 at the significance level of α = 0.05. This shows that there is an impact of interaction between the use of learning model and critical thinking on student learning outcomes. It can be concluded that H_0 is rejected and H_1 accepted.

Meanwhile, the average score of each are: A_1B_1 with a score of 38.27, A_1B_2 with a score of 31.27, A_2B_1 with a score of 29.64, and A_2B_2 with a score of 33.91. Table 3 is illustrated the results of the hypothesis testing of the effect of interaction between the use of learning models and critical thinking.

Table 3 shows that the F_{count} is bigger than F_{table} which means that there is a significant impact on interaction between the use of learning model and critical thinking on the learning outcomes of Indonesian History subject. The third hypothesis of the average value of the learning outcomes of Indonesian History subject on students with high critical thinking using the Discovery Learning model (A_1B_2) is 38.27, while the average value of learning outcomes of Indonesian History subject of students with high critical thinking using Direct Instruction model (A_2B_1) is 29.64.

These two values are, then, compared by using the John Tuckey (1949)'s test (*cf* Tukey, 1949; Kao & Green, 2008; and Kim, 2014). The result shows that Q_{count} (14.24) > Q_{table} (4.04) at the significance level of α

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= 0.05. Hence, it can be concluded that H_0 rejected and H_1 accepted, meaning that there is difference of learning outcomes between students with high critical using the Direct Instruction model.

The fourth hypothesis of learning outcomes of Indonesian History subject on students using Discovery Learning model and having low critical thinking is lower than the result of learning outcome of Indonesian History subject on students using Direct Instruction model. The average score of learning outcomes of Indonesian History subject on students with low critical thinking using the learning model of Discovery Learning (A_1B_2) is 31.27, while the average score of learning outcomes of Indonesian History subject on students with low critical thinking using Direct Learning model (A_2B_2) is 33.91.

The result of the data shows that Q_{count} is 4.35 bigger than at Q_{table} is 4.04 at the significance level of $\alpha = 0.05$. Hence, it can be concluded that H_0 is rejected and H_1 accepted, which mean there is difference of learning outcome of Indonesian History subject on students with low critical thinking using Discovery Learning model and low critical thinking students using Direct Instruction model. See table 4.

Discussion. From the result of data analysis, it is known that learning process using Discovery Learning has a higher and more significant effect in optimizing the learning outcomes of Indonesian History subject. Students get better learning outcomes after being given the Discovery Learning model. The result of the first hypothesis testing shows that the learning outcomes of Indonesian History subject using the Discovery Learning model are higher than the outcomes of students using the Direct Learning model. Students are very active and enthusiastic during the learning process using Discovery Learning model. This model is able to make students more active and have responsibility for the acquired material, so that they are more able to improve their critical thinking. This model is able to make students maximize their opinion in a discussion (*cf* Ahmad & Suwirta, 2007; Hanurawan & Waterworth, 2011; and Paul, 2012).

The result of the second hypothesis testing shows that there is an impact of interaction between the use of learning models and student's critical thinking ability on the learning outcomes of Indonesian History subject. Selection of the suitable model becomes one of the most important things in the learning process in order to improve and optimize the ability that will affect student learning outcomes. In addition, by thinking critically, students will be able to increase their interest in the learning process of Indonesian History subject, so that the learning outcomes in the process of learning the Indonesia History subject will increase (*cf* Drake & Nelson, 2005; Hasan, 2012; and Paul, 2012).

The result of the third hypothesis testing shows that the learning outcomes of Indonesian History subject of students with high critical thinking using the Discovery Learning model are higher than those of students using the Direct Instruction model. In the learning process, students with high critical thinking will be able to follow the Discovery Learning model very well. Students are able to explain every theme regarding the development of colonialism and imperialism in Indonesia very well during a group discussion (*cf* Drake & Nelson, 2005; Hanurawan & Waterworth, 2011; and Fahruddin & Sugiyono, 2018).

Learning Discovery model is more suitable for students with high critical thinking, because in the learning process students are given the opportunity to express their opinions on an issue and to a group of friends or to other students, so that students are able to express and explain new ideas and are more happy and comfortable in completing the learning process. This model is able to encourage students to improve high critical thinking ability, in order to understand a material (*cf* Wiriaatmadja, 2003; Ahmad & Suwirta, 2007; and Thorp, 2014).

In the learning process, students are required to present an idea to others, because in this model students are expected to contribute an opinion to a group of friends. Such learning process will be able to improve the learning outcomes of Indonesian History

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subject, so it can be concluded that the Discovery Learning model is suitable for students with high critical thinking and Direct Instruction model is appropriate for students with low critical thinking (*cf* Wiriaatmadja, 2003; Hanurawan & Waterworth, 2011; and Awang *et al.,* 2016).

The results of the fourth hypothesis testing shows that the learning outcomes of Indonesian History subject of students with low critical thinking using the learning model of Discovery Learning is lower than the students with low critical thinking using Direct Instruction model. This is because in the process of Direct Instruction, students have less active role. Students only acquire material from what is explained by the teacher, so there is a lack of interaction among fellow classmates (*cf* Hasan, 2012; Slamet, 2017; and Fahruddin & Sugiyono, 2018).

Students with low critical thinking are more suitable to use Direct Instruction model, because this model does not require group cooperation. Not all students are given responsibility in the learning process, so that students are less challenged. In Direct Instruction model, teachers only explain (lecture) and interspersed with tasks the material is delivered without any interesting activities that require students to play an active role, and this does not encourage the students enough to employ critical thinking during the learning process (*cf* Drake & Nelson, 2005; Hanurawan & Waterworth, 2011; and Awang *et al.,* 2016).

A well-facilitated learning process by the teacher will be more easily followed by students with low critical thinking. This is because students are not required to further develop their abilities and are less involved in the learning process. Students are only involved to listen to the teacher's explanation, so that this kind of learning process is good for students who have low critical thinking (*cf* Wiriaatmadja, 2003; Drake & Nelson, 2005; and Ahmad & Suwirta, 2007).

CONCLUSION

It can be concluded from the results that the learning outcomes of Indonesian History subject on students using the learning model of Discovery Learning show higher results compared to the students using Direct Instruction model. There is an impact of interaction between the learning model and critical thinking on the learning outcome of Indonesian History subject.

Learning outcome of Indonesian History subject using the Discovery Learning model of students with high critical thinking shows higher results compared to those using Direct Instruction models in students with high critical thinking. Learning outcomes of Indonesian History subject using the Discovery Learning model of students with low critical thinking shows lower results than those using Direct Instruction model on students with low critical thinking.[1]

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[1] ***Statement***: We, hereby, declare that this article is our original academic work, so it is not product of plagiarism, due to all sources used and cited in the analysis are showed clearly and available in the References. This article is also not submitted, reviewed, and published yet in other scholarly journals.

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History Teachers and Their Obligation to Enhance the Critical Thinking
(Source: http://annx.asianews.network/content/local-association, 9/10/2018)

A teacher is, other than the implemented learning model, one of the important learning sources in the learning process. However, nowadays, teacher-centered learning system results in student's low critical thinking ability. One of the causes is students are not given enough chances to develop their critical thinking ability. History learning has an important role in shaping a strong nationality and will be able to motivate students to think critically and develop their sense of nationality.

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