



THE PRACTICALITY AND EFFECTIVENESS OF LESSON PLAN SET ON THE TOPIC OF DIGESTIVE SYSTEM IN TRAINING THE CRITICAL THINKING SKILLS OF JUNIOR HIGH SCHOOL STUDENTS

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Abstract:

This development research of lesson plan set aims to evaluate the practicality and effectiveness of the lesson plan set on the topic of the digestive system in training junior high school critical thinking skills. The lesson plan set includes syllabi, teaching materials, student worksheet, learning materials, and evaluation sheet. The steps of development are using Plomp and Nieveen's (2013) which consists of preliminary research and prototyping. The used research method is quantitative descriptive. The research was done in five months (July-November) at the State Junior High School 1 in Banjarmasin. The research subject of the small group test is 12 students of VIII C class, and the field test is 35 students of VIII A class. The appointment of the research subjects is done purposively, which selected the students who have high, medium, and low academic capability. The practicality data is gained through the researchers' assessments on the learning process done by partner teachers, using the format of lesson plan implementation assessment and students' responses on the learning on the small group test using response questionnaire. The effectiveness data is obtained through 1) spiritual assessment, 2) affective assessment, 3) cognitive learning result, 4) psychomotor assessment, 5) critical thinking skill assessment, 6) teachers' activity and 7) students' activity. Data analysis is done descriptively. Practicality lesson plan is used because partner teachers able to do the teaching activity and students give positive responses on the teaching activity. Lesson plan set is considered effective based on 1) spiritual assessment, 2) affective assessment, 3) cognitive learning result, 4) psychomotor assessment, 5) critical thinking skill assessment, 6) teachers' activity and 7) students' activity.

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1. Introduction

Education is strived in preparing the competent and competitive human resources. According to Suma (2010), the learning process in schools determines the quality of education. The 21st century requires skills, knowledge, and learning innovation as the preparation of students' capability and competence to face challenges (Khulthau, 2010). Educational process has to develop the thinking skills which is one of the essential life skills. Someone who wants to succeed in any aspects needs critical thinking skills (Filsaisme, 2008). One of the main goals of the educational process is the critical thinking skills (Haghparast *et al.*, 2014). Secretary Commission on Achieving Necessary Skills (SCANS) explains that skills which the students must have are including creative thinking, problem-solving, seeing the idea picture, decision making, knowing to learn and reasoning (Sani, 2014). The critical thinking skills are a basic thing which needs to be taught to the students. Critical thinking, creative thinking, problem-solving, and decision making are a high level of thinking. The basic of the high level of thinking is critical thinking (Hasnunidah, 2012). This shows that the critical thinking skills has to be mastered first before reaching the other three high level of thinking skills.

Critical thinking is an active, persistent, and concise consideration of a belief or an accepted knowledge (Fisher, 2007). Ennis (1985) divides it into 5 groups with 12 indicators. Based on the survey by The Programme for International Student Assessment (PISA) in 2012 on the natural sciences, Indonesia is ranked in 64 of 65 countries (OECD, 2014). Indonesian students' ability in giving reasonings is ranked in 41 of 42 countries based on the report of Trends in International Mathematics and Science Study (TIMSS) in 2011 (Wasis, 2015). This shows that the critical thinking skills of the students is still low. The critical thinking skills are really needed by every people in facing future challenges so they can compete in any aspects (Kusumayasa *et al.*, 2015). This skill is needed and must be had by the students (Beaumont, 2010). Because of those reasons, the critical thinking skills need to be trained on the implementation of learning in school.

The learning must be designed to facilitate the students in training their critical thinking skills. Educational Process Standard of Minister Education and Culture in Indonesia emphasizes on the active student participation in the learning process. It can be done through activities based learning which develop various characteristics like interactive, inspiring, fun, challenging, motivating the students to actively participating, and giving room to the students to develop their initiative, creativity, and independent according to their interests, talents, and physical development as well as their psychology. The learning has to implement scientific approach (Hosnan, 2013). This approach can be implemented using learning model that match with the characteristics of inquiry learning model. The implementation of inquiry model is one of the efforts in

strengthening scientific approach. So, it needs the lesson plan set which based on an inquiry into training the students' critical thinking skills.

Sani (2014) suggests the inquiry-based learning as the activity of idea investigation, questions, or problems. Problem analysis needs a set of information. Information is gathered from observation, experiment or other activities. The investigation involves activities and abilities which focus on the searching of knowledge or active understanding to satisfy the curiosity (Haury, 1993). The process of critical and analytic thinking is emphasizing on inquiry learning so the students find the solutions to a problem by themselves (Hosnan, 2013). Furthermore, Arends (2008) explains that the emphasize of inquiry learning is to help the students to investigate by themselves and develop their abilities, like asking and formulating the solutions. Teachers can construct the learning by implementing inquiry principles to the learning process.

Learning process needs to be supported by lesson plan set that facilitates implementation of inquiry learning model. The implementation of lesson plan also needs to train the students' critical thinking skills. Because of those reasons, the development research is needed to evaluate and improve existing lesson plan rank (Zaini and Supiati, 2016). This aims to fix and increase the quality of learning process and its output which is supported by a good set (Jaya *et al.*, 2014). The development of lesson plan is a set of processes or activities which are done to produce a lesson plan set based on existing development theories. This research is an iterative design and focused on implementation and development of education aspect (Rawson & Hughes-Hassel, 2015). Development steps which can be used for lesson plan set development research (learning design) are Plomp and Nieveen development (Afza, 2016; Zaini and Supiati, 2016).

Learning needs to be linked with existing experiences and knowledge of the students. Natural science learning process emphasizes on direct learning experiences, so the students can develop competencies in understanding their surrounding environment (Handayani, 2017). The learning of digestive system topic will be more valuable if the students can do the investigation. The investigation aims to make the students understand what foods they consume and how the body process the foods that enter the body. The can work scientifically in a set of investigation activities like foodstuff test, observing digestive system anatomy and food digesting process.

Teachers can implement investigation-based learning like inquiry model. Inquiry model that match with junior high school students is guided inquiry (Astuti and Setiawan, 2013). The implementation of this model is expected to help the students to train their critical thinking skills.

Existing reports of lesson plan set development research (Zaini, 2016, Zaini and Rusmini, 2016 2016; Fadilah *et al.*, 2017; Fuad *et al.*, 2017). Based on the explanations, it raised the question: How is the practicality and effectiveness of natural science lesson plan set on the topic of digestive system in training junior high school students critical thinking skills?

2. Material and Methods

The development research consists of preliminary research, prototyping, and assessment phase (Plomp and Nieveen, 2013). However, this research is only emphasizing on the prototyping step. Prototyping is a formative evaluation which steps based on Tessmer (1998)' model that consists of 1) self-evaluation, 2) expert review, 3) one-to-one, 4) small group test, and 5) field test. This research is done in five months (July-December 2017) at the State Junior High School 1 in Banjarmasin. The subject of small group test is 12 students of VIII C class, while the subject of field test is 35 students of VIII A class. The subjects are determined purposively, which means the students who have high, medium, and low academic capability.

Lesson plan practicality test is done through small group test, while the effectiveness is through field test. Practicality data is obtained through 1) observers' assessment on the learning implementation by partner teachers on small group test using lesson plan implementation format in form of checklist with scale of 1-4 using conditions: 1 = not implemented at all (not good), 2 = done in small part (not good enough), 3 = partly done according to procedures (good enough) and 4 = done according to procedures (good), and 2) students response on the learning when small group test by giving checklist with statements strongly agree (SA), agree (A), doubtful (D), disagree (DA), and strongly disagree (SD). Effectiveness data is obtained from 1) spiritual assessment through observers' assessment by using observation sheet which equipped with assessment rubric, 2) effectiveness assessment through observers' assessment by using observation sheet which is equipped with assessment rubric, 3) cognitive learning result in form of evaluation question using multiple choices consists of 30 questions, 4) psychomotor assessment through observers' assessment using observation sheet equipped with assessment rubric, 5) critical thinking skills assessment is assessed using assessment sheet, 6) observers' assessment to teachers' activities using teachers' activities observation sheet, and 7) observers' assessment to students' activities using students' activities observation sheet.

Data analysis determines practicality, those are: 1) implementation score is taken average then the average is compared with Hart (1993)'s implementation score category which is 3,50-4,00 good (done as procedures), 3,00-<3,49 good enough (partly done as procedure), 2,00-<2,99 not good enough (done in small part), 1,00-<1,99 not good (not done at all) and analyzed descriptively, and 2) students' responses answers on every question is taken average and being percentaged. The percentage is analyzed descriptively.

Lesson plan set effectivity data analysis which is obtained from assessment data when field test is analyzed descriptively by comparing average result with categories adapted from Arikunto (2010) which is very good (76%-100%), good (51%-75%), enough (26%-50%), not good enough (<25%). The result of cognitive learning is determined by individual and classical completeness. Minimum classical completeness is 75%, while individual completeness using Minimum Criteria of Mastery Learning (KKM) is 85. Teachers' activities result is added wholly and set as its activity parameter frequency.

The frequency is being percentaged and categorized as good if $\leq 10\%$ and bad if $>10\%$. Teachers' activities result is analyzed descriptively. Students' activities assessment result is added wholly and set as its activity parameter frequency. The frequency is being percentaged and categorized as good if $\geq 10\%$ and bad if $<10\%$. Students' activities result is analyzed descriptively.

3. Result

A. Lesson Plan Set Practicality

Lesson plan set practicality is obtained from 1) lesson plan implementation by teacher partners and, 2) students' responses to the learning implementation.

1) Lesson Plan Implementation

Lesson plan implementation data by teacher partner is presented in Table 1.

Table 1: Lesson Plan Implementation

No	Learning Activities	Score	Category
1	Teachers open the learning	4,00	Good
2	Teachers do apperception	4,00	Good
3	Teachers give motivation	4,00	Good
4	Teachers give the learning goal and pretest	4,00	Good
5	Teachers present the discourse (Phase 1 inquiry: orientation)	4,00	Good
6	Teachers instruct students to formulate the problems (Phase 2 inquiry: problems formulation)	4,00	Good
7	Teachers instruct the students to formulate hypothesis (Phase 3 inquiry: hypothesis formulation)	4,00	Good
8	Teachers instruct the students to complete the procedures and do the investigation (Phase 4 inquiry: data collecting)	3,33	Good Enough
9	Teachers instruct the students to process investigation result data	4,00	Good
10	Teachers instruct the students to analyze the data (Phase 5 inquiry: hypothesis testing) and conclusion (Phase 6 inquiry: conclusion formulation)	4,00	Good
11	Teachers instruct the students to do presentation	3,83	Good
12	Teachers close the learning	3,50	Good

Information: 3,50-4,00 : good (done as procedures), 3,00-<3,49: good enough (partly done as procedure), 2,00-<2,99: not good enough (done in small part), 1,00-<1,99 : not good (not done at all)

According to Table 1, partner teachers' ability to implement lesson plan is good except on the activity instructing the students to complete the procedures and doing the investigation is good enough.

2) Student Responses

The data of students' responses to the implementation of inquiry-based is presented in Table 2.

Table 2: Students' Responses to the Learning Implementation

No	Statements	SA	A	D	DA	SD
1	This natural science learning makes me have high willingness to follow the lessons	33,33	58,33	8,33	0,00	0,00
2	This natural science learning makes me have high willingness to use the learning time well	25,00	41,67	25,00	8,33	0,00
3	This natural science learning makes me easier to understand the lessons	66,67	25,00	8,33	0,00	0,00
4	This natural science learning is very interesting and not boring	33,33	41,67	25,00	0,00	0,00
5	This natural science learning makes me able to eliminate false concepts in myself	25,00	33,33	41,67	0,00	0,00
6	If natural science learning is done like this, I can remember the concepts from materials longer	33,33	58,33	8,33	0,00	0,00
7	This natural science learning can help me solving the real-life problems linked with the learning topics	25,00	33,33	33,33	8,33	0,00
8	This natural science learning widens my knowledge	83,33	16,67	0,00	0,00	0,00
9	If natural science learning is done through inquiry model, it can improve learning achievements	41,67	50,00	8,33	0,00	0,00
10	If natural science learning is done like this, it can improve the group learning spirit	41,67	33,33	25,00	0,00	0,00
11	This natural science learning can improve my reasoning in learning the topic	41,67	33,33	25,00	0,00	0,00
12	This natural science learning can help me think more critically	16,67	66,67	16,67	0,00	0,00
13	This natural science learning can improve my creativity	41,67	50,00	8,33	0,00	0,00
14	This natural science learning can make me feel more appreciated in stating opinions	25,00	58,33	16,67	0,00	0,00
15	This natural science learning is making me brave in stating my opinions	41,67	41,67	16,67	0,00	0,00

Information: SA: strongly agree, A: agree, D: doubtful, DA: disagree, and SD: strongly disagree

According to Table 2, most of the students give agree and strongly agree on responses towards 15 response questions. It shows that the students giving positive responses toward the inquiry-based learning lesson plan set. The data acquiring of lesson plan set practicality through partner teachers' ability in implementing the lesson plan and students' responses become a consideration to test the lesson plan effectivity.

B. Lesson Plan Set Effectiveness

Lesson plan set effectiveness is based on 1) spiritual assessment, 2) affective assessment, 3) cognitive learning result, 4) psychomotor assessment, 5) critical thinking skills assessment, 6) teachers' activities, and 7) students' activities.

1) Spiritual Assessment

The summary of spiritual assessment is presented on Figure 1.

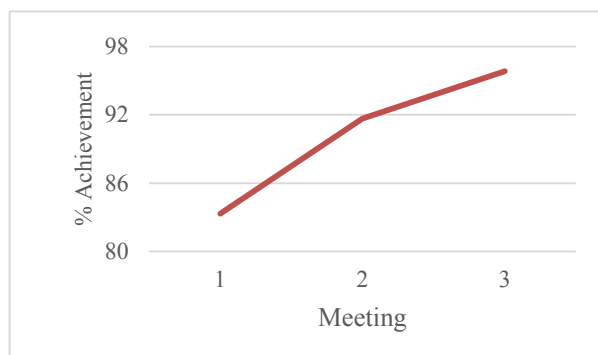


Figure 1: The diagram of achievement average on the students' spiritual assessment

Categories information: very good (76%-100%), good (51%-75%), enough (26-50%), not good enough (<25%)

Figure 1 shows that the spiritual average is increasing and reaching very good category.

2) Affective Assessment

Affective assessment summary is presented on Figure 2.

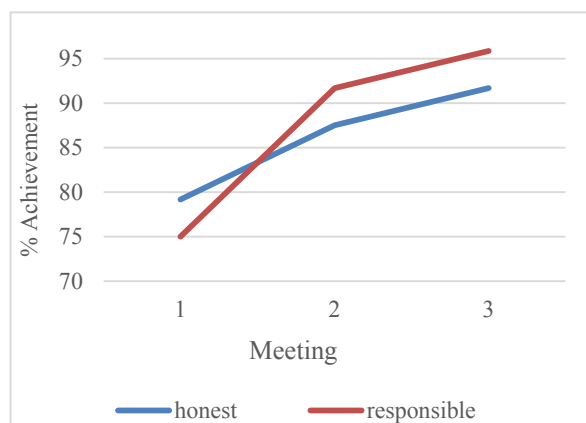


Figure 2: The diagram of average achievement on the students' affective assessment

Categories information: very good (76-100%), good (51-75%), enough (26-50%), not good enough (< 25%). Figure 2 shows that the average of honest and responsible attitude is increasing and reaching very good category.

3) Cognitive Learning Result

The cognitive learning result is presented on Table 3.

Table 3: Cognitive Learning Result

Test	Maximum Score	Learning Result		Number of Students	% Classical Completeness
		Passed (person)	Not Passed (person)		
Pre-test	100	3	32	35	8,57%
Post-test	100	29	6	35	82,86%

Information: minimum criteria of mastery learning (KKM) = 85, classical completeness = 75%

Table 3 shows that the cognitive learning is reaching classical completeness.

4) Psychomotor Assessment

The result of psychomotor assessment is showed on Figure 3.

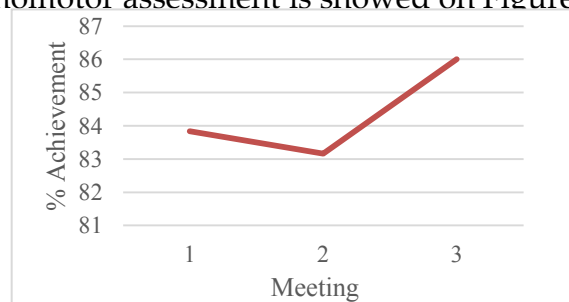


Figure 3: The diagram of achievement average of students' psychomotor assessment
 Categories information: Very good (76-100%), Good (51-75%), Enough (26-50%), Not good enough (< 25%).

Figure 3 shows that psychomotor of the students is reaching the very good category. However, it tends to decrease on the second meeting and increase on the third meeting.

5) Critical Thinking Skills

The result of critical thinking skills observation is showed on Figure 4.

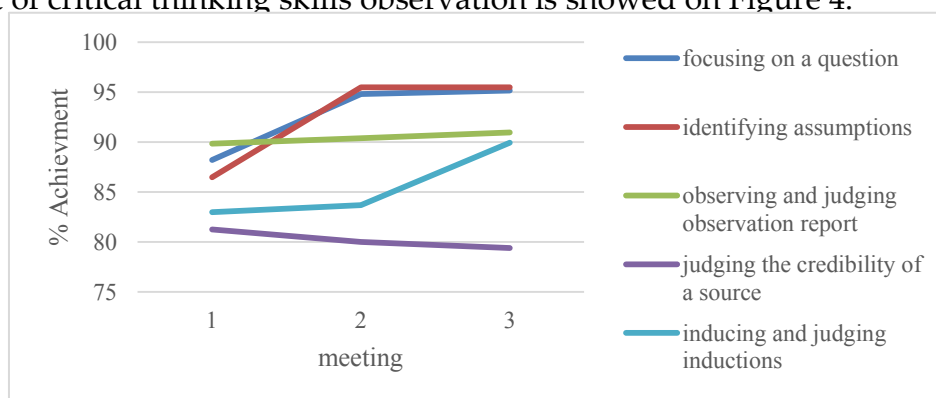


Figure 4: The data of achievement of students' critical thinking skills
 Categories information: Very good (76-100%), Good (51-75%), Enough (26-50%), Not good enough (< 25%).

Figure 4 shows that the critical thinking skills of the students is increasing on the indicator of focusing the questions, identifying assumptions, observing and considering

the observation results, and making and assessing induction. However, the indicator of assessing credibility from a source tends to decrease.

6) Teachers' Activities

The data of teachers' activity during the learning process is showed on Table 3.

Table 3: Teachers' Activities

No	Teachers' Activities	f	%	Category
1	Giving apperception, motivation, and delivering learning goals	4,67	8,73	Good
2	Presenting the course according to materials and guiding the students in making the questions and the research questions,	4,33	8,72	Good
3	Guiding the students in making the relevant hypothesis to the problems	3,00	6,38	Good
4	Guiding the students in doing investigation	11,00	19,80	Bad
5	Guiding the students in collecting data from investigation	10,33	17,78	Bad
6	Guiding the students to analyze the data	14,33	24,48	Bad
7	Giving chances to each groups/particular group to present the investigation result	4,67	8,73	Good
8	Guiding the students to make the conclusion	3,00	6,38	Good

Information: ≤ 10 (good), > 10 (bad)

Table 3 explains the teachers' activities are already good except on guiding the students in doing the investigation, guiding the students in collecting data from the investigation, and guiding the students to analyze the data.

7) Students' Activities

The data of students' activities during the learning process is presented in Table 4.

Table 4: Students' Activities

No	Students' Activities	f	%	Category
1	Responding teachers' apperception and motivation	2,28	13,44	Good
2	Raising the questions and its research questions	2,00	11,87	Good
3	Creating hypothesis	1,78	10,58	Good
4	Creating investigation procedures and doing investigation	2,56	15,34	Good
5	Noting the result of investigation	2,28	13,42	Good
6	Analyzing the data	3,33	20,15	Good
7	Presenting the investigation's results	1,44	8,55	Bad
8	Creating conclusions	1,11	6,64	Bad

Information: ≥ 10 (good), < 10 (bad)

Table 4 shows that the students' activities are already good except on presenting the result and creating conclusions.

According to the result, it can be inferred that:

- a. The practical lesson plan set is used because of partner teachers able to implement lesson plan well and receive positive responses from the students.
- b. The lesson plan set is effective to use because 1) students' spiritual learning result is very good, 2) students' affective learning result is very good, 3) cognitive

learning result is surpassing the classical completeness, 4) students' psychomotor learning result is very good, 5) students' critical thinking skills learning result is very good, 6) teachers' activities are good, and 7) students' activities are good.

4. Discussion

A. Lesson Plan Set Practicality

The implementation of learning during three meetings received good category. It means that the planned activities can be implemented well during the process (Indraningtyas and Wijaya, 2017). A good lesson plan has a high impact on the teaching process and student's individual development (Gedvilienė, 2012). This shows that the lesson plan is categorized as practical. A lesson plan is categorized as practical if the teachers able to use it (Zaini and Asninda, 2016). This finding is in line with the existing findings (Jaya *et al.*, 2013). They reported that the lesson plans with setting guided inquiry are categorized as practical. This is characterized by the teacher can easily implement the lesson plan set (Dewi *et al.*, 2013)

The students give positive responses to the learning implementation. Positive responses show that there is enthusiasm for the learning (Handayani *et al.*, 2017). The finding supports the previous research (Zaini and Asnida, 2016). They suggest that practicality of the lesson plan can be seen from the students' responses which is the positive majority of the learning.

B. Lesson Plan Set Effectivity

Lesson plan set is effective to use because it already reached the set effectiveness criteria. Lesson plan set is said as effective if it fulfills the effectiveness indicators (Mulyono *et al.*, 2012). Students' spiritual is very good. Teachers give impressions towards the learning and linked with the Al Quran verses translation so the students can absorb its translation. Mahardika *et al.* (2016) explains that the students' religiosity can grow through introducing the students to the God's almightiness through Its creatures. The lesson plan set succeeds to grow the students' religiosity. It supports the existing research (Yunita, 2016). She concluded that the students' spiritual is very good with guided inquiry learning.

The observation of honest attitude is very good. Students answer evaluation and assignments with confidence and trying to answer the problems with their own thinking. It is in line with Kushartanti's finding (2009) which reports that higher confidence will affect the lower cheating attitude.

Responsible attitude is very good. Students are responsible to do assignments within the group. Sohibin *et al.* (2009) explains the students will be more responsible if there is the distribution of assignments to each member. Guided inquiry model-based learning is able to grow the responsible attitude. Guided inquiry helps the students in developing responsible attitude (Bilgin, 2009). Guided inquiry learning able to guide the students to have individual and in group responsible attitude (Ambarsari *et al.*, 2013).

Honest and responsible attitudes is a scientific attitude and included in characterized attitude. The increasing affective learning result using guided inquiry model-based learning lesson plan set is in line with existing findings (Jaya *et al.*, 2014; Koksar and Giray, 2014; Zaini, 2016). They concluded that the character of the students showed positive results with guided inquiry learning.

The result of cognitive learning is increasing. Students receive the knowledge well with the implementation of guided inquiry mode. The use of guided inquiry learning model in the learning process can increase the understanding of natural science concepts (Astuti and Setiawan, 2013; Anggareni *et al.*, 2013; Rinarta, *et al.*, 2014; Kurniawan *et al.*, 2015). This concepts understanding is obtained through several activities done by the students. They are involved directly in the learning process. The investigation involves activities and abilities focused on the knowledge findings (Haury, 1993). Students solve problems by themselves using their knowledge so it produces a meaningful learning (Dahar, 2011). In line with constructivism theory which believes that students' activeness in the learning process will help students' cognitive (Jauhar, 2011). Positive contributions of guided inquiry towards cognitive learning results are supported by the existing findings (Bilgin, 2009; Yunita, 2016; Zaini, 2016; Zaini *et al.*, 2017).

Psychomotor assessment is reaching very good category. Students are active in investigation activities. Inquiry learning emphasizes on investigation process in form of answering a question (Sani, 2014). This shows that inquiry learning can develop students' psychomotor competency (Majid, 2013). Teachers' guidance is matched with investigations' difficulties. Teachers only guide once to make sure there are no missed procedures. Students are more skilled and active in the investigation process. This is in line with Vygotsky's social development theory which is scaffolding where teachers will give more guidance on the beginning then will be reduced on the next steps so students can do it independently (Jauhar, 2011; Diawati *et al.*, 2016). This finding is in line with Chodijah *et al.* (2012) who reports the guided inquiry model learning is effective in increasing psychomotor learning result. Saputra (2012) concludes the implementation of guided inquiry also can increase students' learning results including cognitive, affective, and psychomotor aspects. Inquiry-based learning emphasizes on a balanced cognitive, effective, and psychomotor aspects (Blessinger, 2013).

Critical thinking skills also becomes an indicator of the effectiveness of lesson plan set (Zaini and Supiati, 2017). Critical thinking skills of the students also reached good category on each indicator. It increases on the indicators of focusing on questions, problems identification, observing and determining observation's results, and creating and assessing induction. However, an indicator of assessing a source's credibility tend to decrease.

Students can focus on a question by making research question. Lesson plan set can increase their critical thinking skills in formulating the questions. It is in line with Zaini (2016) who stated that inquiry learning increases critical thinking skills made by the increase when formulating the problems. Students identify assumptions by stating hypothesis based on the stated problems. Hypotheses are relevant to their own made

problems. Ennis (1985) explains assumption identification is a predicting activity. Hypothesis later tested in data collecting process (investigation). Observation and determining observation indicator are developed through proof and data analysis phase. The proofs are obtained through tests (Kristanto and Susilo, 2015). This indicator tends to be the lowest comparing to others and tend to decrease. This is caused by the difficulties of the students in processing the data and source of information and time limitation. Students make a conclusion based on investigation and data analysis which they have done. Conclusion making is a form of students' training indicator in critical thinking of making induction.

The analytical and critical thinking process is emphasized on inquiry learning so the students find the answers to a problem by themselves (Hosnan, 2013). McBride *et al.* (2012) stated that natural science learning using inquiry involves scientific process and used skills by the scientists to learn and help the students in implementing it. It can be seen by the learning activities containing a problem and process of finding answers through research steps. The increasing of critical thinking skills through guided inquiry is in line with existing findings (Rahma, 2012; Kurniawan *et al.*, 2015; Uswatun and Rohaeti, 2015; Zaini, 2016; Duran and İlbilge, 2016; Zaini and Rusmini, 2016; Fadilah *et al.*, 2017; Suryani *et al.*, 2017).

Teachers are not dominating in the learning process. Teachers' role is as the facilitator. Kristanto and Susilo (2015) explain teachers; role as facilitator is to help the students in difficulties. Teachers dominate on difficult activities where the students hardly do by themselves like when the investigation, data processing, and data analyzing. Teachers still have to do some guidance. Guidances are aimed to help the students in difficulties when guided inquiry model is implemented. However, teachers do not help in all learning activities (Susilo and Atun, 2017). Inquiry based learning can develop the skills of teachers in managing learning that raises the interest of students towards learning (Zaini and Jumirah, 2016).

Students' activities are categorized as good despite on several low activities parameter.

Students are more interested in receiving the learning so it pushes their spirit and impact on their activities. Students' activities in inquiry learning are doing the investigation and interpreting data (Sani, 2014). It is supported by student worksheet and learning materials which are already constructed using guided inquiry. Student worksheets are effective in developing their critical thinking skills (Kurniawati and Atmojo, 2015). Students can follow inquiry-based learning well thus they dominate in the process. In line with Majid (2013) who stated that students' domination in learning is shown by maximum students' activities. Students' activities in presenting and formulating conclusion still need to be improved. The implementation of inquiry learning should consider the time well because inquiry learning takes a long time (Hosnan, 2014; Sani, 2014).

5. Conclusion

1. Lesson plan set is practical to use based on 1) Lesson plan implementation by partner teachers and 2) students' responses
2. Lesson plan set is effective to use based on criteria: 1) spiritual assessment, 2) affective assessment, 3) cognitive learning result, 4) psychomotoric assessment, 5) critical thinking skill assessment, 6) teachers' activity, and 7) students' activity

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