Increasing Student’s Motivation and Geography Learning Outcome Using Active Debate Method Assisted by *iSpring Suite*

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Abstract

This research aims to know the effect of active debate method assisted by *iSpring Suite* on motivation and Geography learning outcome. This is a quasi-experimental research with quantitative to describe research results. Research subject is students in XI IS 1 class as the experimental group and students in XI IS 2 class as the control group in Senior High School 1 Mayong, Jepara Residence, Indonesia. Data of motivation level was collected by questionnaire, meanwhile the cognitive learning outcome data was collected by test. Based on research results it was known that: (1) there is an effect of active debate method assisted by *iSpring Suite* on Geography learning motivation, and (2) there is an effect of active debate method assisted by *iSpring Suite* on Geography learning outcome.

Keywords: active debate method; *iSpring Suite*; motivation; Geography learning outcome.

Introduction

Motivation and learning outcome are important to enhance student’s success in Geography learning. The increase of motivation and learning outcome are affected by teacher’s role in learning process (Sugiasih, 2015; Widayanti, 2014). Teacher’s role is the main priority to support good learning and increasing student’s motivation and learning outcome. High motivation level and Geography learning outcome of XI grade student in Senior High School 1 Mayong, Indonesia could be achieved by solving the problems in teaching and learning. The problem was that the learning process is still teacher-oriented by lecture method and discussion. Those methods caused the students to become less active. The material delivery was also lack of modern technology such as computer-based media, because the teacher was only used conventional Student’s Worksheets. Therefore, the concept understanding of students was still low. The use of technology in the modern era should be concerned so that the learning process will be effective. According to Şanli *et al.* (2016), the use of modern technology has an important role in Geography learning. Problems stated in previous explanation had caused low motivation and Geography learning outcome and they need to be solved.

Active debate method is a learning method that designed to make the students active in class individually or in group, creating meaningful learning condition that effective and optimal. Active debate method is effective to solve the...
problems in learning process because it has many advantages, they are: support an active learning (Marsidjo, 1990; Shoimin, 2014; Zulyetti, 2014), support a contextual learning characteristics (Mardapi, 2004; Yulaelawati, 2004), a facility to integrate character education values (Rofiah, 2016; Suwondo & Suyato, 2011). The combination of all of those advantages is highly needed in enhancing Geography learning in class. Therefore, the students can gain a big advantage in learning process that includes theoretical and practical aspects.

Active debate method advantages could be the basic foundation of its application. That assumption is also supported by the fact of its success in empirical studies: to increase student’s questioning skill in Social Science learning (Arif, 2016), effectiveness level of active debate method in Sociology learning (Djunadi, 2010), to increase student’s learning outcome in Electronic Engineering (Marshudi & Kholis, 2015), to increase student’s speaking skill in Indonesian Language learning (Febryaningsih et al., 2016; Zulyetti, 2014), to increase discussion skill in Civics learning (Nurdin, 2016), to increase student’s critical thinking skill in Natural Science learning (Pramesswari et al., 2016), and to increase both student’s motivation and learning outcome in Electronic Engineering learning (Sudarmawanto & Budijahanto, 2012). Relevant research results shown that active debate method was never been implemented in Geography learning, so that this research could give a new contribution in education.

A computer-based media was needed to enhance the effectiveness of active debate method. The use of computer-based media is very important to increase student’s motivation and learning outcome (Halidi et al., 2015; Seroja & Gultom, 2015; Utami, 2014; Yulia, 2013). iSpring Suite is a computer-based media that could help to present the learning material and facilitate the implementation of active debate method, so that the students will understand the material more easily. iSpring Suite should be used because it was proven to have positive impact in educational research (Bofill, 2013; Carniel, 2016; Jafarian, 2016; Jahandideh, 2016; Kuzmenko, 2016; Mulei & Michael, 2016; Lenggis & Bambang, 2016; Suprapti, 2015; Suprapti, 2016).

Based on the background that has been explained, active debate method assisted by iSpring Suite could be implemented to solve the problems of Geography learning.

Research Method
This research was quasi experimental research with non-equivalent control group design. The data collected was quantitative data to describe the research results. Subject of the research is XI grade students in Senior High School 1 Mayong, Jepara Residence, Indonesia in 2016/2017 academic year. Sample was taken by purposive sampling techniques. The sample includes 37 students of XI IS 1 class as experimental group and 38 students of XI IS 2 class as control group.

Learning motivation data was collected by Attention, Relevance, Confidence, and Satisfaction (ARCS) questionnaire that consists of John Keller’s indicators. The questionnaire was adopted from Muﬁdah (2012) because it had been used in previous research and had content validity of 92.3%. Learning motivation data was calculated by percentage equation and then consulted to the percentage criteria according to Ridwan (2015). The calculation result was used to describe learning motivation level. To test the hypothesis, motivation data was also analyzed by t test.

Cognitive learning outcome data was collected by using a valid multiple choice tests consisted of 40 questions. Cognitive learning outcome data was described to know the average score of each class (experimental and control group). To test the hypothesis, the data was also analyzed by t test and gain score analysis according to the equation and criteria of Hake in Ain (2013). The conclusion was the effect of active debate method assisted by iSpring Suite on student’s motivation and Geography cognitive learning outcome.

Findings
This research consisted of two groups that include experimental class (using active debate method assisted by iSpring Suite) and control class (using lecture and discussion method). Descriptive and parametric data analysis should be done to know the effect of learning model on student’s motivation and Geography learning outcome.

Student’s Motivation and Geography Learning Outcome
Descriptive data analysis was done to get the overview of student’s motivation level and cognitive learning outcome in Geography learning. The result of descriptive analysis was used to know the criteria based on their percentage. Learning motivation percentage of students in experimental and control group can be seen in Fig. 1.

From Fig. 1, it could be known that student’s motivation in experimental class before the method implementation was 66.8%. After three meetings of learning process using experimental method, student’s learning motivation was increased 6.1% so that the post intervention motivation was 72.9%. According to the percentage, it could be concluded that the student’s motivation was good. Before the experiment, motivation percentage of control class (67.8%) was higher than experimental class. After the implementation of lecture and discussion method, the motivation percentage was 69.8% or increasing 2%. From the percentage, it could be concluded that student’s motivation level is also good.
Descriptive analysis of student’s cognitive learning outcome was done to know the difference of pretest and post test results in experiment and control class. Based on the analysis, it was shown that maximum score of pretest and posttest were higher in experimental class. The difference of those scores made the mean of pretest and posttest in experimental class increase more significantly than those of in control class. The complete result is shown in Table 1.

**Table 1: Geography Cognitive Learning Outcome in Experimental and Control Class**

<table>
<thead>
<tr>
<th>Score</th>
<th>Pre test</th>
<th>Post test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>42,5</td>
<td>97,5</td>
</tr>
<tr>
<td>Minimum</td>
<td>20</td>
<td>82,5</td>
</tr>
<tr>
<td>Mean</td>
<td>30,1</td>
<td>88,9</td>
</tr>
<tr>
<td>Maximum</td>
<td>47,5</td>
<td>82,5</td>
</tr>
<tr>
<td>Minimum</td>
<td>15</td>
<td>67,5</td>
</tr>
<tr>
<td>Mean</td>
<td>29,6</td>
<td>73,4</td>
</tr>
</tbody>
</table>

Gain score analysis was done to know the difference between effect of active debate method assisted by *iSpring Suite* in experimental class and lecture and discussion method in control class. The difference was useful in order to know their effectiveness in increasing cognitive learning outcome. Gain score analysis result can be seen in Table 2.

Based on the calculation of experimental class’ data, the gain score was dominated by high criteria (100%), meanwhile in the control class the gain score was average (94,7%) and high (5,3%). The mean of gain score was consulted to the criteria according to Hake in Ain (2013). The experimental class was in high criteria with the score of 0,84. Meanwhile, the control class was in average criteria with the score of 0,62.

**The Difference of Student’s Motivation and Geography Learning Outcome**

Statistical analysis was used to test the research data. Parametric statistical analysis was done including assumption test (normality and homogeneity test) and hypothesis test. Normality test was done by Kolmogorov-Smirnov test with significant level of 5% (0,05) assisted by IBM SPSS Version 20 program. Normality test result can be seen in Table 3.
The data was known to have normal distribution. The data was then analyzed by homogeneity test and hypothesis test. Homogeneity test was done by Levene Test with the significant level of 5% (0.05), meanwhile the hypothesis test was done by using Independent Sample t test with same significant level. The result of homogeneity and hypothesis test could be seen in Table 4.

Homogeneity test result showed that all of the data were homogeneity so that the hypothesis test could be performed. Based on the hypothesis test, the significant value of post treatment learning was 0.002 and the learning outcome was 0.000. Those values were smaller than 0.05 so the null hypothesis ($H_0$) was rejected. According to the analysis result, it can be concluded that there was an effect of active debate method assisted by iSpring Suite on student’s motivation and Geography learning outcome. The difference of motivation and learning outcome between experimental and control class were due to treatment accepted by both class.

**The Effect of Active Debate Method Assisted by iSpring Suite on Student’s Motivation**

Learning motivation is one of important aspects to enhance the sustainability of learning process. Students also need learning motivation to enhance their success in learning. The statement was supported by Suprihatin (2015) who stated that learning process will be successful if the students are motivated to learn. Based on the statement, it could be inferred that learning motivation has a positive impact on students. The direct impact for motivated students in learning process is to give them more spirit of adding more knowledge, new experience, and giving positive response to their teacher.

Active debate method assisted by *iSpring Suite* was used to stimulate student’s external motivation so that they could be enthusiastic in learning. Relevant studies showed that external motivation is needed to support student’s success in learning (Anjani *et al.*, 2016; Corpus & Stephanie, 2014; Deci *et al.*, 2001; Gillet *et al.*, 2012; Guthrie *et al.*, 2000). External motivation could be in form of teacher’s support to make the students active in learning process, individually as well as in group. By concerning about external motivation, hopefully student’s motivation can be increased.

To measure student’s learning motivation, ARCS model (Attention, Relevance, Confidence, and Satisfaction) by John Keller was used in the research. The model was appropriate to measure student’s motivation, proven by previous researches (Ali *et al.*, 2016; Aşıksoy & Özdamlı, 2016; Keller, 2016; Kurt & Keçik, 2017; Khairi & Adlan, 2016; Malik, 2014; Mohamad *et al.*, 2016). By the use of ARCS model, motivation data could be collected to have best research result.

**Table 3**: Normality Test Result

<table>
<thead>
<tr>
<th>Variable of Normality Test</th>
<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation – Pre</td>
<td>Sig 0.200</td>
<td>Normal</td>
</tr>
<tr>
<td>Motivation – Post</td>
<td>Sig 0.109</td>
<td>Normal</td>
</tr>
<tr>
<td>Learning Outcome – Pre</td>
<td>Sig 0.200</td>
<td>Normal</td>
</tr>
<tr>
<td>Learning Outcome – Post</td>
<td>Sig 0.200</td>
<td>Normal</td>
</tr>
<tr>
<td>Motivation – Pre</td>
<td>Sig 0.200</td>
<td>Normal</td>
</tr>
<tr>
<td>Motivation – Post</td>
<td>Sig 0.133</td>
<td>Normal</td>
</tr>
<tr>
<td>Learning Outcome – Pre</td>
<td>Sig 0.060</td>
<td>Normal</td>
</tr>
<tr>
<td>Learning Outcome – Post</td>
<td>Sig 0.067</td>
<td>Normal</td>
</tr>
</tbody>
</table>

The data was known to have normal distribution. The data was then analyzed by homogeneity test and hypothesis test. Homogeneity test was done by Levene Test with the significant level of 5% (0.05), meanwhile the hypothesis test was done by using Independent Sample t test with same significant level. The result of homogeneity and hypothesis test could be seen in Table 4.

Homogeneity test result showed that all of the data were homogeneity so that the hypothesis test could be performed. Based on the hypothesis test, the significant value of post treatment learning was 0.002 and the learning outcome was 0.000. Those values were smaller than 0.05 so the null hypothesis ($H_0$) was rejected. According to the analysis result, it can be concluded that there was an effect of active debate method assisted by *iSpring Suite* on student’s motivation and Geography learning outcome. The difference of motivation and learning outcome between experimental and control class were due to treatment accepted by both class.

**Table 4**: Homogeneity and Hypothesis Test Result

<table>
<thead>
<tr>
<th>Homogeneity and Hypothesis Test Variables</th>
<th>Homogeneity Test Result</th>
<th>Conclusion</th>
<th>Hypothesis Test Result</th>
<th>Conclusion of $H_0$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation – Pre</td>
<td>0.113</td>
<td>Homogeny</td>
<td>0.461</td>
<td>supported</td>
</tr>
<tr>
<td>Motivation – Post</td>
<td>0.642</td>
<td>Homogeny</td>
<td>0.002</td>
<td>rejected</td>
</tr>
<tr>
<td>Learning Outcome – Pre</td>
<td>0.107</td>
<td>Homogeny</td>
<td>0.758</td>
<td>supported</td>
</tr>
<tr>
<td>Learning Outcome – Post</td>
<td>0.303</td>
<td>Homogeny</td>
<td>0.000</td>
<td>rejected</td>
</tr>
</tbody>
</table>
Based on the research result, it was known that student’s motivation in experimental class was higher than those in control class. The early percentage of learning motivation in experimental class was 66.8% and then it increased 6.1% so that the motivation at the end of experiment was 72.9%. Meanwhile, the early percentage of motivation in control class was 67.8% and it increased 2% so that at the end of experiment the motivation was 69.8%. The result showed that higher increase of motivation occurred in experimental class. Hypothesis test also showed that there was an effect of active debate method assisted by iSpring Suite on learning motivation, with significant level of 0.002.

The research result was supported by the change of student’s behaviour in experimental class learning process. The implementation of active debate method made the students become more active and enthusiastic in learning, especially in doing the group assignment and argument sharing. The students were happy that they could do the assignment together with their friends. They also became confident in making argument according to their own understanding. Those behaviours are relevant to the characteristics of highly motivated students described by Sardiman (2014): not easily discouraged by obstacles in learning, can defend their argument, not easily let go of their beliefs, and like to seek the answers or solve problems. The use of iSpring Suite was also made the students to become focus, interested, and motivated in Geography material delivery. The media was designed to make the students active in question and answer session so that their understanding in Geography material could be enhanced.

The success in increasing student’s learning motivation could happen because of teacher’s role in designing and implementing learning strategy. One of the strategies that could be used in the learning process is reward and punishment. Based on the research results of Sujiantari (2016) and Wulandari & Hidayat (2014), reward and punishment were important in increasing learning motivation. Reward and punishment would make the student enthusiastic and actively involved in learning. The reward could be in form compliment or applause, meanwhile in punishment the compliment wouldn’t be given. The implementation of reward and punishment was relevant with the statement of Sardiman (2014) in the effort of building student’s learning motivation.

The Effect of Active Debate Method Assisted by iSpring Suite on Geography Learning Outcome

Learning outcome is not only useful in mapping student’s competency on learning material, but also important as a foundation to decide whether a student can continue to the next learning material or not. The importance of learning outcome was attached to the aspects assessed in learning. According to Widoyoko (2016), the assessment of student’s learning outcome includes the competency of knowledge, attitude, and skill (cognitive, affective, and psychomotor). The assessment of those three aspects was done in balance so that the result could be used to determine each student’s relative position to a given standard.

Learning outcome is highly related to student’s learning motivation. High learning motivation will have an impact in high learning outcome (Astuti, 2012; Hamid & Chandra, 2013; Ikhtiirinawati & Khoirunnisa, 2013; Indriani, 2016; Putri & Isnani, 2015; Sartika & Basri, 2015; Ulfah et al., 2016). Information about student’s learning outcome is needed by the teacher to determine the correct decision about student’s next learning process. The decision could be an effective learning strategy to increase student’s learning outcome, or an evaluation about student’s learning difficulties.

The research showed that active debate method assisted by iSpring Suite could increase learning outcome. The success of increasing learning motivation in this research was proven by the percentage of students who passed the Minimum Passing Criteria. Passing percentage or cognitive learning result in experimental class was increased after treatment with mean score of 77.9. Meanwhile, the student’s mean score in control class was 73.4. From the difference of learning outcome percentages, it could be concluded that in control class there were still many students who were not passed the material yet.

The success of experimental method implementation was supported by the hypothesis test result with significant value of 0.000. From the analysis it could be known that there was an effect of active debate method assisted by iSpring Suite on learning outcome. The calculation of gain score was also supported the success of active debate method assisted by iSpring Suite, because the mean score of experimental class was higher than that of control class. That could be happen because active debate method could make the students become active individually and in group. By the addition of iSpring Suite as learning media, the students could easily understand the Geography material. The easiness of material delivery could increase student’s understanding on material so that it could significantly affect the learning outcome.

The success in increasing learning outcome was also supported by teacher’s learning strategy. The reward and punishment strategy could be used because it could affect the increase of learning outcome (Prasetyo, 2015; Yana & Safiah, 2016). Implementation of that strategy could be done by giving additional score to the assignments done by active students. In reverse, passive students wouldn’t receive additional score. From the explanation, it could be known that learning strategy could also have positive impact in learning.
Conclusion
Based on the research results it could be concluded that:

1. There was an effect of active debate method assisted by iSpring Suite on Geography learning motivation, shown by the score of student’s motivation in hypothesis test.
2. There was an effect of active debate method assisted by iSpring Suite on Geography learning outcome, shown by the score of student’s learning outcome in hypothesis test and their increase in gain score test.

Suggestion
Based on the research results, the suggestions to optimize the implementation of active debate method assisted by iSpring Suite are:

1. Teacher should integrate various learning strategy in active debate method assisted by iSpring Suite to maximize the student’s motivation and Geography learning result.
2. In this research, active debate method assisted by iSpring Suite had been implemented in Basic Competence of: “Describing the utilization of living environment in connection to sustainable development” and student’s learning outcome was assessed in cognitive area. It is suggested for the next researcher to implement the method on the other basic competence of Geography learning and assess the student’s learning outcome in affective and psychomotor area.

References


