CHAPTER III

METHODOLOGY

A. Location and Research Subject

This research was conducted at one public school in Cimahi, one district in Bandung which implemented KTSP (Kurikulum Tingkat Satuan Pendidikan). This school was chosen based on innovation of teaching and learning method in the classroom which was supported by subject teacher. The subject of research in this school is students of seventh grade junior high school (n=26). Sampling technique in this research subject was determined by purposive sampling. Purposive sampling is often used in educational research. Purposive sampling determined sample by several considerations which give better probability in research (Arikunto, 2010). The class was chosen with consideration in preliminary studies that the class with debate as learning method could create better subject’s understanding of the students.

B. Research Design

This research emphasized on the students’ argumentative skill, descriptive method used. Phase for this research was habituation phase, pre-implementation phase, implementation phase, and analysis phase. Those phases would be described in research procedure.

C. Research Method

Descriptive research method was used in this research as the purpose of this research to get information of which criteria of argumentation dominant in students and the students’ argumentative skills during debate in classroom with their response to this debate. In description research, describing or explaining one phenomenon, for example condition or situation (Arikunto, 2010).
D. Operational Definition

In order to interpret linear in the research and prevent misunderstanding some of terms in used in this research, therefore there are some of terms should be explained as follows:

1. Scientific Argumentation Performance

Scientific argumentation performance is students argumentation conducted by students’ activity with debate procedure adapted from Leuser (2003) that assessed using formal debate evaluation by SEDA (2007).

2. Debate in Ecosystem Concept

An instruction method that has several stages includes presentation, rebuttal, response and summary especially in sub-concept of water pollution.

E. Research Procedure

Several procedures were conducted in the implementation of this research. Therefore, the procedures were generally classified into three stages; they were preparation stage, implementation stage, and conclusion stage. Each stage consisted of several activities which were conducted during research.

1. Preparation Stage

Preparation stage was made to prepare some useful activities for research:

a. Literature review was conducted to support the analysis about 1) argumentation 2) debate 3) debate rubrics
b. Research problem and research question were arranged after analysing literature review, this stage also re-title the research suitable for questions.
c. Instrument adaptation was composed to answer research question. Instrument of the research included 1) debate format 2) debate rubric 3) questionnaire
d. Supervisor judgment for research instruments was conducted by expertise.
e. Teacher chose three potential class to begin debate habituation

f. Habituation phase:

Habituation phase was conducted in the class to introduce first experience in debate motion and to make students usual in debate before implementation, there are several stage conducted in habituation such as follows:

In this phase, teacher made activity in two weeks related to debate. In the first week of habituation, teacher made two big debate team and was proposed them with an air pollution problem related to their condition near school district, “Kendaraan bermotor di Cimahi menyebabkan siswa-siswi terjangkit penyakit pernafasan” A team as affirmative and B team as contradictory. Students were joined in team and begin to structure the information related to the problem statement. Teacher provided them to search the information through book or internet during instruction. In this habituation, teacher indirectly briefs the students to debate in big team, meanwhile students were debate with their information and also simple argumentation. In this habituation, students had agreed assessment to determine the winner. In the end of first week, teacher and students were discussed the problem statement based on their information and teacher modules. Teacher also introducing debate procedure adapted from Leuser (2007) before conducting the second week of habituation, students may ask about debate procedure so that debate is clearly conducted without any obstacles.

Second week of habituation phase, previously teacher informed students to separate two big debate team into four debate team with two problem statement about pollution. The first problem statement is “Banjir di Indonesia diakibatkan oleh percemaran lingkungan” and was debated by A and C team, meanwhile second problem statement is “Efek rumah kaca terjadi sejak jaman prasejarah” was debated by B and D team. Team assessed by teacher by structuring information with simple paper for their debate module. Before conduct their debate, teacher checked their papers so that students has focused, and strength information and argumentation to be present to the opposites. Next, students in A and C team were debate in the first meeting meanwhile B and D team debated in second meeting. After students debate, teacher determined the winner based on
agreed assessment with students. Next, teacher and students were discussed based on the information. In the end of second week students were determined into six teams, students dicing to determine the member of the team and students was informed again about the debate procedure. After is habituation phase, teacher conducted two meeting for their simple papers to put information and argumentation. After two meeting conducted, teacher began the implementation stage.

2. Implementation Stage

Implementation stage was conducted three weeks with 2 x 40 time allocation in each meeting. Implementation stage has several activities such as follows:

a. Before the implementation was occurred, speakers divided into team and they have to arrange papers as their guide. In one week, there were two teams with the same problem statement; it was assessed by teacher and observers in debate grading rubrics. Description of problem statement is below:

1) First (1st) meeting: The first and second team debated “Pencemaran Sungai Citarum yang Disebabkan oleh Merk Pakaian Ternama” (Water Pollution Caused by Famous Fashion Brand In Sungai Citarum)

2) Second (2nd) meeting: The third and fourth team debated “Pemerintah Berperan Penting dalam Kerusakan Ekosistem di Jawa Barat” (Government’s Role in River East Java Ecosystem Damage in East Java)

3) Third (3rd) meeting: The fifth and sixth team debated “Pencemaran Limbah Tekstil di Bandung yang Menyebabkan Masyarakat Tepi Sungai Terganggu” (Bandung Textile Waste Pollution which Causes Riverside Society Distraction).
3. Conclusion stage

After the analysis stage was conducted in implementation stage, conclusion and suggestion for further research and lacks from this research would be presented. The conclusion was made based on research question that was answered from the results. Research flows was described in Figure 3.2

Figure 3.1 Flows of Research
F. Instructional Tool

Process of teaching and learning in the classroom may had supportive tools to complete teacher information of students and also increasing student activity in the classroom. In this research there are three main instructional tools 1) lesson plan was designed as part of instructional planning used by the teacher, especially in the research as instructional tool. Lesson plan is arranged for implementation set in every meeting during implementation. 2) Students’ reflection was designed to collect students’ perception of sub concept of water pollution and collected students’ major knowledge of what they have learnt in the debate. 3) Peer assessed supported by teacher and discussed with the students so that students has agreement in assessing their friend using agreed assessment.

G. Research Instrument

The analysis of scientific argumentation implementation using debate was conducted by using several instruments. These instruments would be elaborated as follows:

1. Debate Criteria Rubric

Debate criteria rubric is instrument which is arranged to measure debate of each speaker in a team. Debate criteria rubric for this research taken from SEDA (2007) Debate grading rubrics were taken from formal debate planning for Social Science subject for grade 7, it also means that formal debate is suitable to be taught earlier in junior high school. Debate grading team that was used in this research is rating for evaluating the speakers in formal debate which has interval 1 to 5 which state 1) need improvement 2) fair 3) average 4) good 5) outstanding. This score would be determining students’ debate percentage. Criteria which were used in this rubric are 1) Organization and Strategy 2) Evidence 3) Delivery or Presentation 4) Refutation or Rebuttals and 5) Parliamentary Procedure (Appendix B.1)
2. Questionnaire

Questionnaire was used to know students’ response after conducting all meetings of debate implementation. The questionnaire consisted of two main indicators; they were 1) students able to have ability to speech, and 2) students able to have ability in debate. Likert scale was used where both indicators consist of favourable and un-favourable statements in the questionnaire; the scoring mark of the questionnaire was done by giving checklist in each number of statement in five answer possibility; 1) Strongly Disagree (SD) 2) Disagree (D) 3) Hesitate (H) 4) Agree (A) 5) Strongly Agree (SA). Each possible answer had different score indicating the value for each possible answer had score range from 0 to 4, orderly. Each statement had positive and negative degree depended on the statement degree, statement number (1, 3, 4, 6, 7) were favourable statement meanwhile number (2 and 5) were unfavourable statement (Appendix B.2)

H. Instrument Development

Instrument procurement would be done if it was not available, researcher could begin to arrange to plan, arrange, test, and revise the instrument. When there are standardised instrument, the researcher could use and lend them to be used in the implementation process. (Arikunto, 2010). The main development of this research is underlies in the adoption of formal debate evaluation by SEDA (2007) and adaptation from the debate format by Leuser (2003).

I. Data Analysis

1. Debate Criteria Rubrics

Debate grading rubrics data were conducted three times based on the meeting. All speakers or students in both teams in every meeting were assessed. The process of data analysis was descriptive statistics and percentage would be explained as follows:

a. Scoring process would be done by analysing students’ capabilities in debate based on scoring rubrics stated in rubric blueprint. The score would be given to each criterion from interval 1 to 5. Each meeting would have three
observers; they were a teacher and two observers to observe ongoing debate. Besides that, there were three marks per each student. Mean was calculated then divided by maximum score (Navidi, 2008). All criteria had the same team by following formula:

\[
\text{Total Score} = \frac{\text{mean total of each students}}{\text{maximum score}}
\]

b. Class interval was used to determine the interval boundary (Navidi, 2008). First, determining the maximum and minimum score to process class interval. Class interval was determined by using free scale (Arikunto, 2010) or impermanent scale which could be used to distribute students in several class intervals. Class interval formula:

class interval = \((\text{maximum score} - \text{minimum score}) : \text{total interval class}\)

Second, putting the class interval into first minimum score in interval class by this formula:

\[\text{interval boundaries} = \text{minimum score} + \text{class interval}\]

c. Determining the frequency and percentage to find score and percent of students performance in argumentative skills suitable to the score in previous rubric (1-5):

Table 3.1 Percentage in A Criterion (Example)

<table>
<thead>
<tr>
<th>Score</th>
<th>Interval Boundary</th>
<th>Frequency ((f))</th>
<th>Percentage ((%))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.40 - 0.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.47 - 0.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.54 - 0.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.61 - 0.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.68 - 0.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
d. After all criterions were determined, the summary of each criteria data were determined in table as follows:

Table 3.2 Percentage of Summary Every Criterion (Example)

<table>
<thead>
<tr>
<th>Description</th>
<th>Organization and Strategy</th>
<th>Evidence</th>
<th>Presentation</th>
<th>Rebuttals</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (f)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

2. Questionnaire

The analysis of students’ questionnaire would be done by classifying data based on the alternative answer given. (Arikunto, 2010) Likert scale process would be used by calculating the following formula. Every statement was determined by x value to determine the trend of students’ response and those statements would be inserted to every statement table.

\[ p = \frac{f}{n} \]

\( p \) = proportion
\( f \) = frequency
\( n \) = respondent sum