CHAPTER V
CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Referring to the main objective of this study which is to examine the students' understanding and argumentation using drawing – based modeling on the concept of Ecosystem, based on research finding, analysis, and discussion several conclusions could be made as follow.

There is significantly different between experiment class that implements drawing based modeling and the control class that implements diagram of food web in students' understanding and argumentation of the concept of Ecosystem. The students in experiment class scored significantly higher than students in control class. Based on analysis of subtopic and the cognitive domain levels of Bloom's revised taxonomy on the concept of Ecosystem both class tend to have the similar pattern, the highest score is the component of the Ecosystem while the lowest score is energy flows subtopic. The highest score is level C1 while the lowest score is C4.

The students' level and coherency of arguments between experiment class and control class which engage in individual argumentation and group argumentation show that there was improvement the level and coherence of arguments in group argumentation because discussion gives the contribution to students' argumentation. The level and coherency of arguments in experiment class is categorized higher arguments because generally contain the elements of claim, data, warrant, backing, and qualifier. While in control class is categorized lower arguments because its only contains claim, data, warrant, and backing.

The students' level and coherency of arguments between experiment class and control class based on the result of argumentation test shows that students' level of argumentation in both groups were predominantly at level 2, but the percentage of students' argumentation in experiment class tend are able to reach level 3 more than students in control class and the coherence of argument is more coherent or higher than students in control class.

5.2. Recommendation

After conducting this research, finding and processing the result, there are several recommendations that should be suggested by the researchers some of them are:

Teachers who will implement drawing based modeling tools or SimSketch for the first time should train students to really understand in operating the drawing based modeling tool or SimSketch. Computer supporting internet network is crucial needed on operating SimSketch because it could be accessed online it's better to using the other software or applications such as 4videosoft Screen Capture or other applications which can be used to record the students work result.

For the further research, it is better to analyze the correlation between students' understanding with students' argumentation as the effect of drawing – based modeling. A class discussion in the end of learning activity would also important as it will endorse the collaborative learning environment instead of competitive learning environment and could stimulate students to argue. Teachers are supposed to trigger students with probing and prompting questions which lead students to think critically as stimulation for students argumentation and teachers should train students to be able to argue through learning activities or assessments such as case studies or provide socioscientific issue and argumentation test.