CHAPTER V

CONCLUSION, IMPLICATION, AND RECOMMENDATION

5.1 Conclusion

Based on the research questions and the finding of the development of science comic to Facilitate Students critical thinking in water pollution topic, there are some conclusions of this research. The water pollution science comic developed through 5 stages. The first stage is analyzing stage. In this stage, the researcher tries to analyze the need by analyzing the content and analyzing characteristics of students. The second stage is the designing stage. In this stage, the researcher starts to make a pannel of the comic and the storyline of the comic. The third stage is development stage. In this stage, the researcher started to develop the science comic based on the design stage that have been done previously, the researcher uses procreate as an application for making the comic. The fourth stage is implementation. In this stage, the researcher distributes the science comic and the questionnaires to the science teachers and students and distributes the science comic and rubric for expert judgment to the expert to test. The fifth stage as the last page is evaluation stage, in this stage, the application was revised based on the teachers' and students' responses through the questionnaire.

The science comic got a review from 3 experts judgment. There are three categories reviewed by experts judgment. For the design got a score of 0.828 with high validity. The content material got a score of 0.678 with medium validity and the language got a score of 0.889 with high validity. The final average score for water pollution science comic is 0.785 with medium validity. There are some aspects that require some revision to make it better based on experts view, and the researcher already revised it based on experts judgment review before distribute the science comic to the students and science teachers to test.

The water pollution science comic got review from three science teachers. The final average score of critical thinking from teachers questionnaire is 87.5%, followed by the language and design category with a score of 83.333%, and the last is the learning experience category has a score of 87.5% the same as average score for critical thinking. The lowest score is the language and design category, although

it has a lowest score, but the score still indicates that language and design category has a very good criteria. The average of all categories shows a score of 86.667%, which means very good. It indicates the water pollution science comic is ready to be used in learning water pollution but a minor revision like make the size of text bigger and shorten the text will make the science comic better.

The water pollution science comic also reviewed by students. The final average score of critical thinking has a score of 87.7% , meanwhile the final average score for language and design category has a score of 85.625% , the last is the learning experience category with a score of 91.25%. The lowest score from students reviews is on the language and design category, it is the same with teacher questionnaire. However, the average score of all categories are 88%, which means very good. It indicates the water pollution science comic is ready to be used in the learning water pollution topic, but a minor revision for the language and the design in the science comic will make the comic more attractive.

5.2 Implication

Based on the research finding, this research produced a science comic that can facilitate students' critical thinking on water pollution topic. This research has a goal to create an innovation in science learning especially to facilitate the critical thinking of students on water pollution topic. The results from the experts, science teachers, and students show positive feedbacks and review, and the science comic is already revised based on experts judgement review. The results indicate the water pollution science comic is ready to be used in the learning activity to facilitate students' critical thinking on water pollution topic. This product development can be benefit for teachers in learning water pollution topic or topics that are related to water pollution like ecosystem, therefore this kind of research can be done with different science topics.

5.3 Recommendation

Based on the research finding, there are some recommendations regarding the development of water pollution science comic to facilitate students' critical thinking on water pollution topic. The recommendations were addressed to other researchers and teachers, who can impact the future development of the science comic and learning environment. The recommendations were described as follows:

1) Other Researcher

The science comic can be developed to be better in so many ways. This science comic didn't include attached link to the real problem that can be found in daily life, it could be more interactive in two ways if there is an attached link or a barcode where link to a web provides a news or a videos about the real problem of the certain material in this case is water pollution or the meaning of some difficult words. The packaging of comic digital can be made more interesting like upload it into a social media or a comic web like webtoon that is familiar, also the design of the comic can have more illustration that explain the material instead of explaining all the material in the text. It also can shorten the text in the bubble that will lead to have bigger size for texts in the bubbles of conversation. The content of material better to cover all the chapter of environmental pollution or make a continuation series comic like water pollution, air pollution, and soil pollution. So it will cover the whole chapter, the storyline also can be developed to have more varies of cognitive levels in facilitating critical thinking.

2) Teacher

The teacher can consider this water pollution science comic as a learning media for students to learn water pollution topic especially to facilitate students' critical thinking. However, it will be better if the teacher guides the students while reading the comic, so it can be supervised step by step when teacher guides the whole class. Teacher also can relate the problem in the comic with an actual problem, the real problem that found in daily life, or a problem that happen recently, it will give a better picture for students so students can grasp the material well. The last, since some words are new for 7th grade students, it will be helpful for teacher to prepare some easier words to substitute or to explain this new and difficult words.