

## **CHAPTER V**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Conclusion**

Based on the result and data analysis gained by this research titled Gamification classroom for enhancing student's computational thinking in learning the respiratory system. The research result obtained some conclusions.

- 1) The implementation of gamification classroom activities were done completely according to the lesson plan, considered by computational thinking skills aspect, and carried out by incorporating game elements, such as points, game characteristics, assessments, and challenges. Some gamification activities carried out are less effective, in terms of assignments that must be completed. So that, elements of the gamification class should be directed more towards students completing online quizzes.
- 2) Gamification classroom enhances students' computational thinking skills on the respiratory system topic, which is determined by the normalized gain value that categorized as an average effect.
- 3) Students' understanding after implementing the treatment, class B is enhancing more than class A. Almost all the computational thinking aspects in class B has higher normalized value. Only one aspect is lower than class A. The computational thinking aspect in class B, that lower than class A is algorithm aspect, but with very low difference which is 0.01. However, the overall average of normalized gain value categorized average or medium. Because, the teachers need to provide more clear directions, appropriate problem approaches, and proper methods to train students in the data processing. Besides that, the learning activity was fully online and not effective for teaching-learning activity, especially in the science subject.
- 4) Students' impressions have very high impressions with the average value 95.8%. The gamification aspect has value of 97.5% and the interpretation is a very high impression, computational thinking and content have the same value 95% and the interpretation are very high impression. Overall impression for student's impression can be concluded positive impression.

## 5.2 Recommendations

The author admitted that several aspects still need to be improved for the research to be highly qualified and accurate. Therefore, the following are the recommendation in order for the next future research to be conducted by another researcher.

- 1) For further research, the gamification rules can be improved with various types of rules and consequence that allows the students to be more active in the learning activity.
- 2) Improve the gamification content, not only the stories text, animation, and video. But also enrich the content with more graph and diagram to help students improve their computational thinking aspects especially in the pattern recognition, and algorithms aspects.
- 3) Gamification classroom can be applied to another topic to allow the students to train their computational thinking skills, not only in science learning or another academic learning, but also in no-academic field such as sport.
- 4) Enrich student's impressions questionnaire with more various types of aspects on gamification classroom, and computational thinking.