

## **CHAPTER V**

### **CONCLUSION AND RECOMMENDATION**

#### **1.1 CONCLUSION**

Referring to the research finding of the effect of educational quartet card game on students' conceptual understanding and students' motivation has been conducted systematically; it can be concluded as follows:

1. The implementation of design Quartet Card Games as teaching media to learned science in the topic food additives substances proved to be significantly effective in improved students' conceptual understanding and students' motivation. That proved by gave students objective test to measure improvement on students' conceptual understanding and gave students questionnaire to measure improvement on students' motivation.
2. The implementation of educational quartet card game in learning food additives substances can improve students' conceptual understanding. It is notice and proved by average N-Gain pretest and posttest layout of an experiment class result get higher. Average N-Gain result has obtained by experiment class is 0.65 which is can be categorized as medium. The result indicates that be concept of food additives substances can be understood better after the student learned used educational quartet card game. From the data, students get more improvement in sub-topic additives substances in analyzed additives substances in food and drink, the Gain in this sub-topic is 47.65, for the second one the sub-topic is about natural and synthetic food additives substances and the Gain get 42.95, and the lowest Gain is 39.71 the sub-topic about differentiate kinds of food additives substances. Which means that the educational quartet card game is suitable to help students learn how to analyzed additives substances in food and drink. The improvement of students' conceptual understanding is also supported by the accepted  $H_1$  which means that there is has effect of educational quartet card games.
3. The implementation of quartet card game also used to measure the motivational theory of John Keller ARCS on students. It is proved by used questionnaire as an instrument to measure the effect quartet card game on students' motivation. The result was obtained that 65% students feel highly

motivated and 35% students feel motivated to learn food additive substance topic after used educational quartet card games. Students' motivation also based on ARCS (Attention, Relevance, Confidence and Satisfaction) processing the difference model use percentage. The percentage of students' motivation was conducted and get the result 82% students feel that quartet card game can make them more get attention to food additive substances topic, 82% students think that the use of this media is fun because they can relate the content with their daily activity and 86% students feel more satisfaction after they learn food additives substances substance used educational quartet card game. The highest result is obtained by the Satisfaction category it means the educational card game in learn food additives substance is suitable to help students feel good about their accomplishments. Which means that educational quartet card games is appropriate to enhance their motivation to learn food additives substances topic.

## **1.2 RECOMMENDATION**

Referring to the research results and findings, the researcher admitted that there are still several aspects to be improved in order for the research to be highly qualified and accurate. Therefore, the following are the recommendations in order for the next future research to be conducted by any other researchers out there:

1. Educational quartet card game can be introduced as an alternative teaching media and strategy to enhance students' conceptual understanding and students' motivation on another topic.
2. Educational quartet card game can be developed into an application.
3. The teacher during playing educational quartet card game is necessary to make sure that every students follow the rules of game, honest and do not cheat during the game to get the point. The teacher also should ensure that the student every member in each group is active in answering the sub topic after they read the definition
4. The design of the quartet card game, it needs to be more interesting and easy to understand the student.

5. If possible, the picture included on the card is not a food product, but the example of the substances itself
6. It would be better to measure the students' conceptual understanding by essay questions which could only be answered by students who have played the educational quartet card game. For example:
  1. This substance has 4000 times sweeter than ordinary sugar and this substance has a toxic effect. The name of this substance is ...
  2. Please mention the effect of food additive substances of flavorings, preservatives, food coloring and sweeteners!