

## CHAPTER V

### CONCLUSION AND RECOMMENDATION

#### 5.1 Conclusion

Based on the results on the analysis in the research, it can be concluded that:

- 1) In the pretest, students obtained 29.17 score for conceptual mastery and 50.00 during posttest. The results show that POE strategy shows enhancement in students' conceptual mastery, indicated by normalized N-gain value 0.29.
- 2) As for critical thinking skills, POE strategy seems suited to enhance critical thinking ability. Using POE strategy, result showed that students gain increase in critical thinking from level 1,30 (*challenged thinker*) to 2,07 (*beginning thinker*).
- 3) POE is good to implement the knowledge into students. However, in its implementation, it is not effective as strategy to implement the whole idea into students as students might face difficulty especially in some stages. Students can easily predict, observe and explain wave concept, but find it tough for transversal wave concept and longitudinal wave concept.
- 4) POE is probably not suited for some subjects or topics that require high thinking level. Predict stage should go well when students are learning common knowledge, but might not be the case with rare cases. Observe stage should go well with sensible knowledge, but might not suit abstract knowledge. Explain should go well if students have least required communication ability, else it might cause misunderstanding instead. To put it short, POE also has limitation but can be solved by modifying the stages in POE by adding, removing or replace one or some stages in POE to suit the subjects/topics. In its implementation, teacher might want to consider what concept to be taught with POE strategy.

## 5.2 Recommendation

Based on the results, it is recommended that POE strategy is used to enhance students' knowledge about the general idea of a concept. Therefore, it here are recommendations obtained from the research:

- 1) POE strategy shows more efficient results the lower cognitive level is. Therefore, it is recommended to conduct POE strategy for concepts or subjects that require more of understanding of the concept rather than applying it.
- 2) For teachers, it is suggested to consider what concepts to be taught with POE strategy. For concepts or subjects that require many skills, POE strategy may also be used for introducing idea and develop critical thinking abilities. However, if the teacher intends to conduct POE strategy on a bigger timeline, subjects that require knowledge of understanding such as biology are recommended.
- 3) For students, POE strategy may be a good solution to be conducted since it will draw students' attention in all of its stages. POE strategy is also good to be conducted in groups to develop students' communication skill and open new minds with other students.
- 4) For researchers, POE strategy may also be researched to find its correlation to other skills such as creative thinking. There have been many developments POE already and it is one that may also integrate with many kinds of methods or model of learning so the strategy should be able to integrate with many possible methods or model that have yet to be found. Researchers can also modify the stages in POE instead by adding, removing or replacing stages in POE, such as making it into Predict Discuss Explain Observe Discuss Explain (PDEODE).
- 5) Conceptual mastery, as the name suggests, refers to the deep understanding of the concept. Therefore, instead of analyzing the effect of POE to students' cognitive domains, the researcher should analyze the effect of POE to concepts in vibration and wave topic. However, the researcher was negligent

in this matter until the research paper was about to finish. It is recommended for the future research not to follow the similar mistakes.

- 6) The research should include steps of implementation of the research so that the readers can obtain information on how well the research was conducted and what steps were done or not done.
- 7) For the next research, it is recommended to further analyze POE by aspects of critical thinking. It will provide clearer view of the effect of POE to aspects of critical thinking. Therefore, more possibilities can be explored and show more accurate results with more aspects of critical thinking.