CHAPTER V
CLOSING

5.1 Conclusion

Based on the findings in this research, there are some conclusions regarding the students' creativity and communication skills in learning sound and waves topic by implementing the STEAM learning approach. The conclusions are described in the following statements.

1) The implementation of the STEAM learning approach has been carried out in learning about sound and waves topic for 8^{th}-grade students in junior high school. From the observation, 84.21% of the learning experiences were implemented, which indicated that almost all of the learning experiences were carried out. The implementation is already following the planning, except for the problem statement, verification, and generalization phases in the scientific practice. Those phases were not entirely implemented due to the time constraints.
2) In the implementation of the STEAM learning approach, students' creativity has a total average percentage of 77.61%, which is categorized as good. Seen from the creativity dimensions, the order for the percentage result from the highest to the lowest is resolution, elaboration and synthesis, and novelty. Furthermore, it is indicated that for students' creativity, the students' percentage scores are diverse. There are four students in the enough category, six students in the good category, and one in the very good category.
3) In the implementation of the STEAM learning approach, students' communication skills have a total average score of 2.77 out of 4.00, which can be interpreted as basic. Between the six indicators, choosing and narrowing a topic has the highest average score. On the other side, providing appropriate and supporting material is the indicator that has the lowest average score. The students' categories of their communication skills are also diverse. There are six students in the basic category, three in

the minimal category, one in the deficient category, and one in the proficient category.

5.2 Recommendations

From the research findings, there are some recommendations for the other researchers, the teachers, or any parties that may concern with this research scope.

1) STEAM learning approach can be an alternative for the teachers to conduct a learning process in a science classroom that can examine the students' creativity and communication skills. For further implementation, the students can be encouraged to improve the originality of their products so that their creativity can be more enhanced. Aside from that, the students can also be encouraged to gain more information and data to support their findings and to make their explanations in the presentation more reliable.
2) The implementation of the STEAM learning approach in online learning should be reconsidered due to the limitation in controlling and supervising the students' individual work progress. Instead, there has to be clearness in the delivery of rules and procedures to follow STEAM activities completely. Besides, the students' learning facilities, e.g., personal computer, internet connection, and tools and materials to create the products as STEAM project results, have to be ensured so that all students can follow the activities thoroughly.
3) This study can be implemented as a reference for future researches in the relevant field. The instruments used in this research that are the observation sheet, CPAM rubric, communication skills rubric, have to be reevaluated.