

CHAPTER V

CONCLUSION, IMPLICATION, RECOMMENDATION

5.1. CONCLUSION

This study aims to see whether STEAM-based learning can improve students' science process skills and creativity. From the results of the research discussed in chapter IV, the ability of science process skills and creativity of students successfully increased after the implementation of learning using the STEAM-based learning approach.

Data analysis of research results for variable science process skills was carried out twice. The first data analysis was carried out as a whole skill and the second for each skill. Overall, the results of research on students' science process skills can be seen in Table 4.2. The average score of testing students' science process skills increased from 29.33 in the pretest to 68.36 in the post-test with an N-gain of 0.55. Based on the categorization of score values categorized by Meltzer (2002), the N-gain is in the medium category. The normality test results showed >0.05 in the pre-test and post test and said the data was normally distributed. Thus, data processing was continued using the paired t-test (parametric test) method. The highest increase was in observing ability (identifying problems). The pretest average score for identifying problems was 31.28 and increased to 76.68 with N-gain in the medium category of 0.66.

There is an increase in the creativity variable that we can see at Table 4.8. The result increase from 75 performance which is in “enough” category to 81 performance which is in “good” category based on Table 3.15 in chapter III. From this result, the conclusion is there is positive effect from implementing STEAM based learning for students' creativity.

From all of the finding in this study, there is significance different between before and after the implementation of simple house electrical intalation project for STEAM based learning to students' science process skills and creativity. Overall, the conclusion is that H_a can be accepted or the implementation of STEAM based learning proven to improve students' science process skills and creativity.

5.2. IMPLICATION

The project in this study is about simple house electrical installation. Students work on project in group consist of 6-7 person. Students have to make house design and its electrical installation. When it comes to electrical installation, there are several problem such as LED can't light up, difficulty in preparing the cable which is need their fine motor skill, and the difficulty to keeping the cables attach to components especially with girl majority in groups. But, due to this problem, students can hone their problem solving skills and in the end their science process skills can be improved.

Besides that difficulty, the study find that simple house electrical installation miniature project can be one of the choice to engage students to have a fun learning in physic which their paradigm about physic is difficult and unpleasant to learn. Students very engage and motivated when they are intructed do make design based on their own dream house but in the novelty dimension of creativity, its need some improvement.

For the science process skills, it is visible that there has increased for all skills. Besides the implementation of STEAM project based learning, the students gets some material from the examiner (teacher) for their basic understanding in electricity topic. In delivering materials, The approach taken by teachers is better to use several questions to trigger students' science process skills.

The simple house electrical installation project use the base experiment electrical circuit and it can help students to enhance their science process skills and creativity while working on project. And it can be one of choice for make a students centered learning because they can understand the concept of electricity by hand-on experiment and build their own understanding about it. This project also create the enthusistic and interesting learning process so the competence can be improved.

5.3. RECOMMENDATION

After conducting in-depth research and reflecting on the implementation of projects in learning, the researcher concluded that there are several things that can be recommendations for further research that must be conveyed. This recommendation contains suggestions to facilitate the implementation of this simple home electrical installation project. Here are some recommendations that

can be used as suggestions for researchers or teachers who will use this project as further research or learning media:

1. For teachers who want to implement this project in school as fun learning, make sure to try to make this project first before giving it to students.
2. The use of sterofom as a material for making miniature houses is more recommended because it is easier to shape compared to the use of cardboard even though it is cheaper in terms of price. In addition, make sure all materials such as light fittings and bulbs are in good condition and can be used and make sure to have a spare for all components.