

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Based on the results and discussion, the following conclusions are:

1. There is an influence of the implementation of virtual laboratory (OSIBYL) towards students' procedural knowledge on DNA extraction experiment in the Biology Education Study Program at Universitas Negeri Medan as students' procedural knowledge post result is higher than pretest result and significantly different at $\alpha = 0.05$ with the value of $t_{\text{count}} > t_{\text{table}}$ ($8.646 > 2.040$).
2. Students' improving learning results after using virtual laboratory (OSIBYL) on DNA extraction experiment in the Biology Education Study Program at Universitas Negeri Medan based on the n-gain test is 0.433 which is in the medium category.
3. Students' self-efficacy questionnaire results after using virtual laboratory (OSIBYL) showed that the average percentage of 69.81% with high enough criteria on DNA extraction experiment in the Biology Education Study Program at Universitas Negeri Medan.

5.2 Recommendation

Based on the results and discussions of this study, the recommendations from this study are as follows:

1. For the student to be more aware that the use of virtual laboratory (OSIBYL) can influence improving students' procedural knowledge results in Molecular Biology course, students are expected to optimize the use of virtual laboratory (OSIBYL) and motivate students to obtain good self-efficacy while learning process.
2. For the lecturer after knowing that the use of virtual laboratory (OSIBYL) can improve students' procedural knowledge results in Molecular Biology course and motivate students to have good self-efficacy and lecturers are expected to increase their professionalism and creativity in teaching, namely

by optimizing the use of technology-based learning facilities and matching the material being taught to improve better teaching methods.

3. For advanced researchers to be able to make like this research by comparing virtual laboratory (OSIBYL) with other virtual or online simulation laboratories also in Molecular Biology course.